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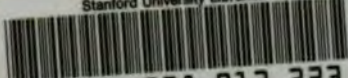
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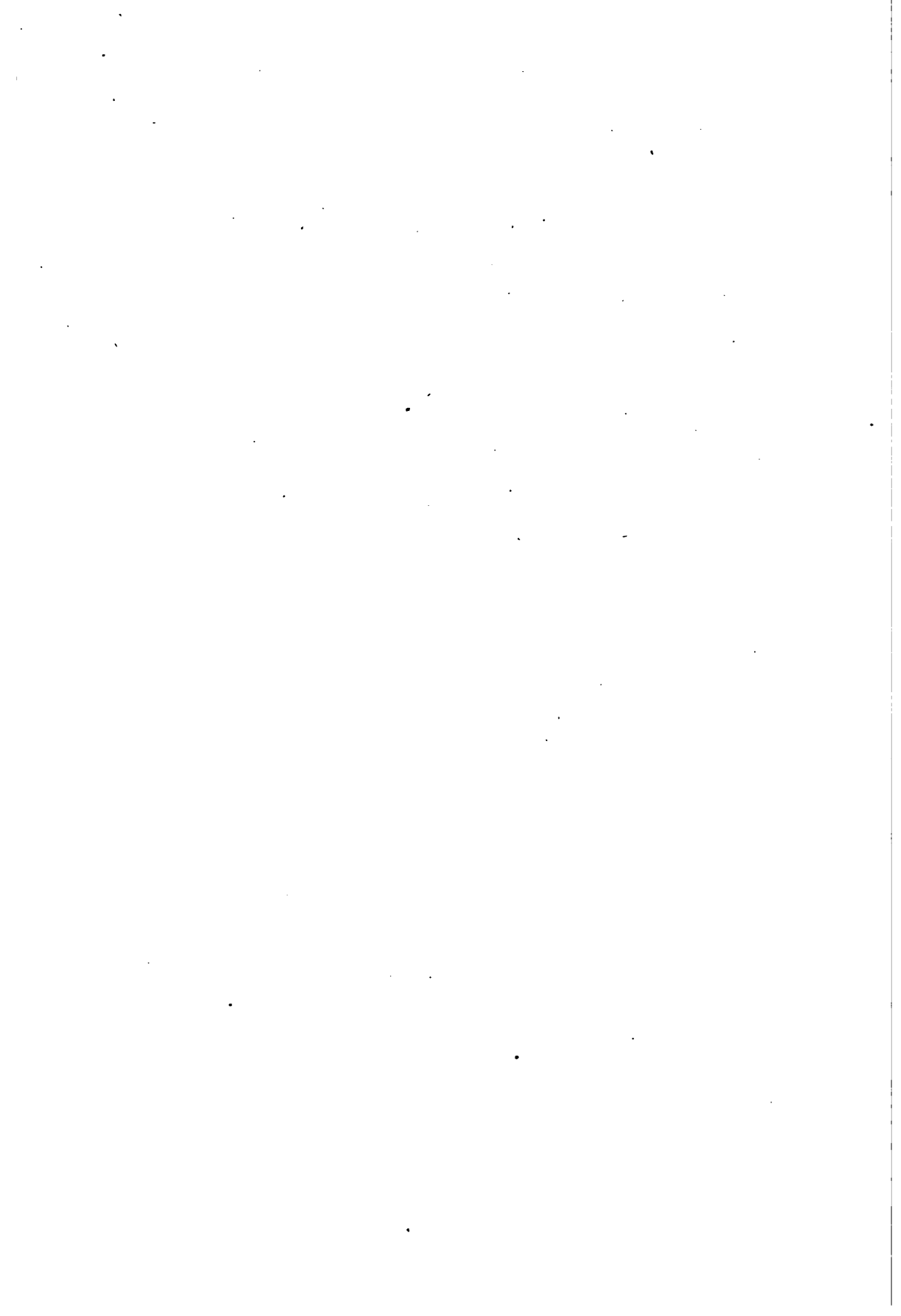
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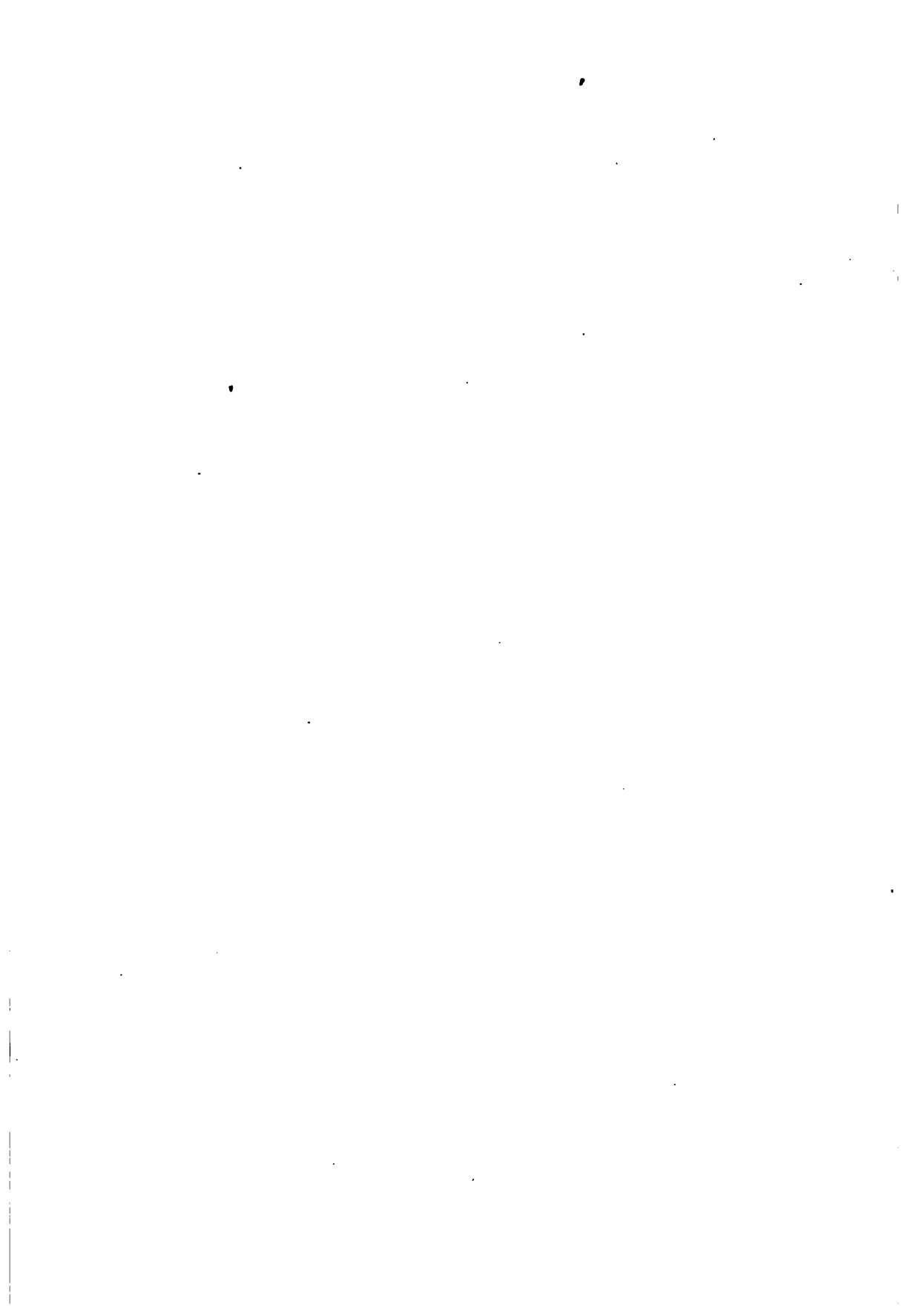


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THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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THE INTERNATIONAL OFFICE OF HOME ECONOMICS, FRIBOURG. (SEE PAGE 8.)

THE Journal of Home Economics

VOL. VIII

JANUARY, 1916

No. 1

THE HIGHEST EDUCATION FOR WOMEN¹

JULIA C. LATHROP

Chief of the Children's Bureau, Washington

For fifty years what is known as the Higher Education of Women has been a policy, whose growth is sign enough of the approval it has earned. The higher education of the great group of women's colleges just established has been and still is purely cultural, avowedly and inevitably offering to women the precise cultural studies offered to men, keeping pace with implicit faithfulness with the development of cultural courses in the leading schools for the education of men.

How and why these cultural courses have widened might well be the subject of a careful study. The changes are a conservative running index of what we like to believe is the growing democracy of our intellectual interests: but the point is that these courses are offered as cultural, part of the unspecialized training of an educated person, or part of the training preliminary to special training. Perhaps there is no one left to question the ability of women to take in and take on this culture. At any rate for our purpose let us consider closed the question of assimilation.

On the basis of this cultural study, men's colleges have added professional schools in growing variety, serving the needs of a few thousands each in pursuits dignified and useful but not absolutely essential to the existence of the race. To certain of these schools women have been

¹ This address was given on October 11, 1915 as a part of the celebration commemorating the fiftieth anniversary of the opening of Vassar College. It is reprinted from the official record of the celebration.

more or less painfully admitted; but they remain men's schools for men's pursuits, and the great foundations for original research are men's foundations. And the intimations that women's powers are powers of assimilation only continue to be heard.

The very words higher education challenge us to the superlative and push us to the subject I have ventured to state. What is the highest education of women and what are some of its immediate possibilities? No one would be bold enough to say that we can discern all these possibilities, and as for the ultimate development of the education of women, it is as far beyond our ken as the Vassar Campus is beyond the imagination of the cave-woman. May I venture to define crudely the highest education of our day as that which upon a cultural basis gives the mind an ardor for discovering facts and relating them to the truth, and which provides the technical equipment of training for independent research.

Recognizing the scope of the graduate professional schools, the wide sweep of the great foundations for original research, it becomes increasingly apparent that there is one great interest not yet made a subject of that study for which the highest education prepares.

The one great avocation constantly requiring the unsparing service of millions of women is the rearing of children and the conduct of a household. The most universal and essential of employments, it remains the most neglected by science—a neglect long hidden behind tradition and sentimentality.

Can women of the higher education do less than undertake to put an end to this neglect, to begin to place investigation and research directly at the service of the cult of the family, and to start forward on paths by which the most important calling in the world shall gradually acquire professional status?

The highest education of women, then, I wish to define in terms of the needs of our own time, as training in original research applied to the life and interests of the family.

Women of the higher education have vindicated the value of freedom for individual development. The family type based upon equal individual culture of both parents gives a further vindication of women's higher education. Family democracy can only lead toward social democracy—slowly, indeed, but surely.

Undoubtedly the family has been gradually gaining in efficiency and in refinement since rivers ran to the sea. Yet as Ellen Richards laboriously analyzed those waters and showed us how to keep them pure for

human use, so, we may be sure, the study of the family will reveal new material and moral standards and the practical means of securing them.

As a few evidences of the need of study of the family, we need only remind ourselves that we do not understand life at the source, nor the reasons for its known wastage, nor how to economize the health and well-being of the race by minimizing this wastage. The subject has been regarded with such fatalistic indifference that we do not yet know how many children are born, nor how many die, nor why they die in our own country, while the more intensive knowledge of infant well-being which would enable us to establish convincingly its relationship to social well-being and to the rectitude and intelligence of parents is yet to be secured and analyzed.

We know strangely little of the growth of the child's mind. Not long ago the advice of a distinguished alienist was sought as to the practical value of studies of the mental development of normal children in earliest infancy and during the years before the school and the outside world directly affect the child. He replied that such studies are of the highest value, that their primary usefulness as aids in working out the best home training of all children goes without saying; and that naturally enough he thought of them as especially needful because of the light they would throw on the baffling questions with which an alienist wrestles in dealing with the history of mental disaster. Such studies can be made only by the aid of the observations of individual mothers. Is it not a complete revelation of our unconscious relegation of the processes of human development to the limbo of instinct that, while there are perhaps thirteen million mothers in this country, there are at best about a half dozen such studies (made by fathers and mothers jointly), and in attempting a plan for such studies a great difficulty is present in finding a competent director?

We do not know the constitution of the American family. I speak of thirteen million mothers, but that is only an estimate based on the enumeration of women who are heads of households. No one really knows. The government census has never been directed to state the number, though this and much other precious information as to the constitution of every family in the country lies unused upon the millions of untabulated schedules filed away for the last thirty years in the census archives.

We do not know how extensive is the industrial employment of married women, nor its effect upon children and family life, nor when it

is a result of a scale of wages for men too low decently to support a family, nor whether it is sometimes the cause of a low scale of wages for men, nor when it is fair to all concerned, including society at large, that mothers should work for hire. Worst ignorance of all, we do not know what is the decent support of a family, nor the factors that affect the question in a world where democratic efficiency is still only beginning the struggle up from feudal efficiency.

All these are questions whose answers can never be complete nor right until they are expressed in terms of the family.

If we cared to ask, these unregarded census figures could tell us various facts which are now seeming mysteries. They could tell the numbers of married women in industry, their ages, the ages and numbers of their children, how many children have lived and how many have perished, the occupation of the fathers and mothers and where the loss of child life is greatest. It would give an intimation of the numbers of families whose mothers are burdened and whose privacy is infringed by lodgers and boarders. Yet there has been no demand for this information, and the material gathered in 1890, in 1900 and in 1910 has remained untouched.

Does the question of domestic service interest you in an academic or a practical way? The unpublished census figures hold the complete history of the shifts in the nationality and distribution of this service for thirty years. Would you know how many families have servants? Would you know how many women perform with their own hands every daily task for their husbands and children? The answers are in the unpublished sheets of the census.

I have referred thus in detail to the vast resources of unused information which the government already possesses in regard to the family because I know of no other illustration which indicates so clearly our national neglect—the unconsidered neglect of students, the unconscious indifference of the public—in a field where it is complacently taken for granted that our emotions and personal interests guarantee our efficient attention.

Again, if the structure of the family is unstudied, still less is its dissolution understood. The profounder causes for those disasters which only emerge in the divorce court among persons of appreciable income are not indicated by the oft-quoted census figures of 1910 which show that one in twelve of the marriages in the United States ends in divorce. May it not be that the efforts of law and religion to cope with family

breakdown lack success because to its study have not been called the wisest representatives of those who inevitably suffer most in disastrous marriages, the women of our country?

Again, women are increasingly the direct retail purchasers of the country. We need education in family expenditure, in the prudent apportionment of an income, in discrimination as to the quality of every article and function which enters into the family life. Here we are confronted perhaps more simply and directly than in apparently larger issues with the fact that no family lives to itself alone. For years a little group of people have urged the purchaser's responsibility, first because unwholesome conditions of production may bring injury to the family of the purchaser, but finally and conclusively because bad conditions of production certainly injure the producer's family, and once our eyes are opened we see a thousand proofs that the injury of one family is the concern of all.

We may well be proud of the scholarly work of the Vassar faculty and alumnae in many fields, but at no point more than here, where pioneer studies in domestic economy by Ellen Richards and Dr. Salmon have pointed the way for future independent students.

I am not unmindful of the tragic family importance of that helpless residue of social wastage whose index is the population of our charitable and penal institutions, yet I believe that a greater promise of usefulness lies in studying normal life. May it not be that this very social wastage will be saved, not by repression nor cure nor prevention, but by construction, by strengthening the general fabric of human society as the physician combats disease by increasing the bodily vigor and its power of resistance.

Consider what the mere establishment of a single center of training for research in the problems of the family would mean. Would it mean less for family life than the founding of this college meant for the individual student? I think far more, because it could build upon that cultural basis which the last fifty years have developed. Perhaps wisely our greater women's colleges have thus far kept aloof from any interest in the practical arts of daily family life. Yet independently a wide movement for bettering the household has begun, helped by the re-discovery of the preciousness of the worker's hand along with the scholar's eye.

The public schools have given us manual training and kindergartens and finally cooking and sewing; the state normal schools and the state

universities have developed teachers' training classes in domestic science; a few public schools have begun to teach practical housewifery in a practical manner; and city health departments have developed Little Mothers' Leagues. There are a few notable instances of rural schools which are also the teachers' homes in which the usual work of daily life is well taught. Certain technical institutions and girls' schools offer practical instruction in domestic arts.

Nowhere is there any center for research and discovery, nowhere a center where choice minds are devoting their powers to the philosophy of the inevitable labors of the average household, to developing by original study improved care of the young who must be matured there, new expedients for enriching the lives of the adults who should be happy there. Nowhere patient research gives the authoritative sanction which would elevate into a national system, strong, free, elastic, the cult of the American family.

A graduate school would train a certain number of persons in the art of independent research in various fields. It would necessarily be also a center of research because such training must be done by contact with actual problems. Much of its work would be extra-mural. It could, for instance, enlist the aid of many thousands of mothers every year.

Such centers of research would serve to correlate and inspire the many scattered educational activities now existing, all of which are making more effective the work of the average household by placing at its service the inventions and appliances of modern science.

Nothing could be more unfortunate than any effort to control the practical teaching already under way:—nothing, on the other hand, more helpful and welcome than centers of original study to which practical people could turn for inspiration and help. And in turn such centers would by their extra-mural relation be kept constantly aware of the practical aspects of their varying studies.

Are some of you thinking that this is far-fetched? That, after all, wisdom makes its contribution through the individual to the home finally, that good parents—the only numerous class of parents—create good households and that the natural devotion of mothers can still be trusted?

May I reply that mother love can be trusted, but that we presume upon it. Maternal affection is the most precious survival of instinctive life. By its motive power millions of women daily perform miracles

of patient toil, but Nature has withdrawn from the human mother the instinctive wisdom which, as Fabre has shown, she bestows so lavishly upon the hymenoptera.

What may we not hope for the future of the race when we put at the service of the human mother's intelligence the continually growing discoveries of research?

I do not propose a small thing nor a cheap thing in urging that the present status of the education of women demands a new specialization to be signalized by the creation of centers of study and research in the service of family life. It means not only great endowment of money, it means the greater endowment of trained minds set to the task of working out the expedients of fashioning the tools of expression by which that profound maternal instinct, reinforced by intelligence, may freely work out the destiny of the young of the race.

It is no less than a revolution which is implied. Its aim is to give the work of the woman head of a household the status of a profession. The change in this direction has already begun and I have referred to the many beginnings of teaching applied household economics as a sign of the coming change. The question is whether the women of the higher education shall strengthen the movement directly and avowedly.

Earlier, when individual development was the goal of education, how often was it said of a woman, "Now she is married. What good will all that education do her?"

With the highest education creating great centers of study through which to utilize and coördinate the observations of mothers, do we not begin to see at once a new application for the higher education?

Mothers of the next generation will need, not to resign themselves to the limitations of their fate, but rather to equip themselves for its illimitable opportunities. Instead of being isolated by the narrow life of home, through it the mother allies herself to the highest studies and makes invaluable contributions as a sheer by-product of her daily cares.

The legal emancipations of women are coming fast. The rapidity of her further educational emancipation rests with herself. Now it is partial; the recognized professions she may enter—those which will always invite a small minority of women. It is for her to make the great occupation of women a profession, to see that the highest education trains those who shall contribute toward that profession's success.

Posterity will smile at the naïveté with which some of us incline to consider women no longer economically useful because the factory has

freed mothers from certain subsidiary domestic arts. In truth she now begins to have time and vision to see that there are real and growing arts in the physical care of the young, in the development of the childish mind and behavior. Above all, the mother of today may look outside her own door. She is gaining an understanding that no home prospers or perishes to itself alone; that the doors of all homes open on the highway of a common happiness, and that economic values are human values.

We begin to see in richer terms the equitable meaning of society and to see in the development of that meaning a task to be preferred by women chiefly, which will demand all the time and wisdom they can summon.

I have spoken of women and to women, and for that very reason it must not be left unsaid that in American civilization as nowhere else in the world women may count in their own task upon the aid of the one force more wonderful than maternal instinct, that purest product of civilization, the devotion of a father.

The initiative for the highest education applied to the service of the family rests with women. The carrying out must be done jointly by men and women, since, diverse as may be their daily tasks, the interests of men and women cannot be separated; both are joined in the great onward march of the race toward that mysterious end which we love to call justice.

THE INTERNATIONAL OFFICE OF HOME ECONOMICS

American workers in Home Economics have little opportunity to become acquainted with the work done along similar lines in the other countries or to know their foreign colleagues. They will, therefore, welcome contact with such an organization as the International Congress for teaching of Home Economics (Congrès International de l'Enseignement Ménager) and its permanent Office at Fribourg, Switzerland. Fribourg, or Freiburg, is the capital of the French-German Canton of the same name, a picturesque old city on the main line from Berne to Lausanne, and should not be confounded with Freiburg-im-Breisgau in the Black Forest, or with the Prussian Freiburg. Apparently it was chosen as the meeting place of the first International Con-

gress (1908) and for the permanent Office not only because Switzerland is always an inviting and appropriate center for international associations but also because it had been headquarters for much of the preparatory work of the Congress. Since 1913 the Office has been under the able direction of M. Léon Genoud, to whom we are indebted for the photograph reproduced as the frontispiece.

It is gratifying to see the prominent position held on the walls of the Director's room by our familiar friends, the food charts of the United States Department of Agriculture, and also to recognize Mrs. Richard's picture nearby. Miss Stanley, who reported the Second Congress, held in Ghent in 1913, for the JOURNAL (vol. 5, 1913, p. 382) and to whom the JOURNAL is much indebted for material concerning the Fribourg Office, which she visited that same year, was much impressed by the excellent collection of Home Economics literature which filled the book shelves, especially that of the textbooks used throughout different parts of Europe. She suggests that Americans might prove their active sympathy with the work of the Office by sending it any of their publications likely to be of interest. The Fribourg Office aims to be an international clearing house for material on Home Economics subjects, and has shown plainly both by the notes published in its quarterly bulletin (*Bulletin de l'Office International de l'Enseignement Ménager*), and by M. Genoud's correspondence with Home Economics workers in this country, how highly it values American publications and also personal contact with and information regarding work and workers in the United States. We, on the other hand, can glean much of interest from the bulletin of the office which is (as far as is known to the JOURNAL) the only publication which regularly summarizes Home Economics news from many countries. It also serves to introduce to us many foreign workers and publications of which we should otherwise know nothing. The address of the editor is l'Office International de l'Enseignement Ménager, Fribourg (Suisse) and the annual subscription within the postal union is 25 cents (1 fr. 25 c.)

In spite of Switzerland's neutrality, her ordinary activities have been so interrupted by the war that the Office has been forced temporarily to publish the Bulletin in double numbers at six instead of three month intervals. The same cause put an end to plans for the third Congress, which was to have been held at Leipzig in 1915, but the general work of the Office seems to be running with sufficient smoothness to insure its regular continuation as soon as conditions in Europe become normal once more.

AIMS AND WORK OF THE NATIONAL SOCIETY FOR THE PROMOTION OF INDUSTRIAL EDUCATION¹

CLEO MURLAND

Secretary in Charge of Women's Work

RECOGNITION AND SUPPORT OF VOCATIONAL EDUCATION

Thousands of children leave the schools each year without having completed the elementary school course which has practically become a minimum requirement for intelligent citizenship and a successful vocational career. Much as society believes in elementary education and secondary education as preparation for life, it is face to face with the fact that although both are provided, only 50 per cent of our young people complete the elementary school course and 10 per cent the high school course.² There is reason to believe that a large proportion of these children can be reached effectively by a type of vocational education which combines practical intensive work in industrial subjects with instruction in related and general academic subjects. It is also believed that such training and instruction will not only tend to make the education of these young people more effective, but that it will increase the number of years of schooling before employment and gradually bring about part-time courses after employment and thus greatly increase the learning period in the individual's life. Under the present régime too many young people go to work unprepared to meet the demands of industrial and commercial life and as a result fail to become successful wage earners and intelligent citizens. They have lost their interest in study; they do not know how to think out their problems and so have neither interest in the school which might help them, nor sufficient intelligence to advance in their chosen vocations.

The National Society believes in the established vocational education for the professions, for commercial pursuits, and in the high school courses which fit those who qualify for the college course. It believes in general education for all children. It believes that a stronger vocational element is needed in general education than it has at the present time. It believes in instruction in homemaking subjects for all girls

¹ Written for the Eighth Annual Meeting of the American Home Economics Association, Seattle, 1915.

² Laggards in Our Schools by Leonard P. Ayres, New York City: *The Survey Associates*, 1914.

as part of their general education. It also believes that the vocational school organized and administered for the purpose of preparing young people for a useful occupation, is not worth the name if it fails to include as a part of the course a considerable amount of general education and general courses in the household arts that will assist in the work of the home. The largest interest of the National Society is concerned, however, with the vocational education which fits boys and girls for profitable employment, an important part of preparation for life which approximately 50 per cent of the young people are not receiving under present conditions. To this end the work of the Society is directed.

The National Society does not believe that choice of occupation should be forced upon young children of fourteen years of age; nor does it believe that vocational education should take the place of general education, but it does believe that vocational education should supplement general education and should be begun at the time when interest in work and wages is beginning to supplant interest in the general courses. The age at which specific vocational training should begin varies, therefore, according to the demands of the pupils and the community in which they live. Preparation for a vocation undoubtedly helps to guard against exploitation (for it is the untrained, unintelligent worker who is exploited), and furthermore, it is the best means for safeguarding the young worker from being tied to one job for life—the one job which gives no desire for successful work or opportunity to rise above the entrance level.

The vocational courses for these children, to be real, should cover as many lines of vocational work as the community affords and should be planned to meet the needs of the community, its industries, shops, factories and stores. Hence the National Society believes that vocational education is largely a local problem and that surveys and studies of local industries, shops and stores are essential to successful vocational courses.

Too much education is aimed toward the president's chair and too little toward the problems near at hand. Vocational education that enables boys and girls to succeed in their own community may safely be trusted to give them the start in life they are entitled to, and to insure intelligent citizenship and desirable advancement as experience and opportunity make it possible. Nothing short of a fair start in life for girls as well as boys, makes for the democratic education which this nation stands for.

WHAT THE SOCIETY HAS DONE TO FURTHER VOCATIONAL EDUCATION

1. Coöperation among the industries, organized labor and educational bodies for the purpose of bringing together for concerted work all those interested directly and indirectly in Vocational Education has been a very important part of the work of the Society.

2. Conferences of superintendents, supervisors, state administrators, teachers, and others have been held periodically for the purpose of establishing standards for vocational education.

3. Constructive work has been done in methods for training tradesmen and tradeswomen for teaching positions in the schools through classes for men at Pratt Institute and classes for women in Indianapolis.

4. Its bulletin for short-unit courses published by the U. S. Bureau of Labor Statistics is being used as a basis for part-time and night courses.

5. Much assistance has been given to State Agents for Vocational Education in organizing and administering vocational schools.

6. The National Society believing that a survey of the schools and of industry should be made before the establishment of vocational schools, has made two such surveys, one in Richmond, Virginia, and one in Minneapolis, Minnesota. It has also made studies of specific industries in several cities for the same purpose.

7. Legislation for vocational education has been written by the Society and its policies regarding the types of schools, courses of study, and methods of teaching are being adopted by many states and local communities.

8. Propaganda for vocational education that will fit young people for profitable employment through lectures, conferences and publications has been an important part of the work of the Society.

9. The Society has added very materially to the literature on vocational education through bulletins published by the Society, by the United States Bureau of Education, the United States Bureau of Labor, and reprints of magazine articles on vocational education. It has also distributed widely state bulletins and other printed matter bearing on vocational education.

WHAT THE COMMITTEE ON WOMEN'S WORK HAS DONE

The Committee on Women's Work has for the past two years been working in close coöperation with the Secretary, Dr. C. A. Prosser, the

Board of Managers and the Executive Committee of the Society, for it is the very strong desire of the women engaged in the vocational education movement to keep the work for boys and girls one strong unit.

The Society has used its influence toward the establishment of vocational day schools which will prepare for useful occupations but the vision for all phases of vocational education far exceeds what young people may be able to learn before they take up their work. It looks forward to part-time education after going to work—a return to the school from time to time for short courses in vocational and general school subjects which will keep alive interest in study and reading and make success possible. Coöperation of the school, the home, and the business world which is being brought about will do much to make part-time training practicable and effective.

The Secretary in Charge of Women's Work has made studies, in a number of cities, of industries employing women. In Philadelphia, a general study of the need for a vocational school for girls was made and report was made to the Board of Education in December, 1914. There is hope that under the new law in Pennsylvania, which makes school attendance to sixteen years compulsory, a vocational school for girls will be established in that city. A study of the dress and waist industry with a plan for a part-time factory school for workers in the industry was made in the spring of 1914 and published by the U. S. Bureau of Labor. A brief study of a few phases of the garment trades of Boston for the Advisory Committee of the Boston Trade School for Girls was made in February, 1915. A study of the garment trades of Cincinnati in coöperation with the Chamber of Commerce and the Board of Education was made during the early summer of 1915. Cincinnati opened its vocational school for girls in September.

For the *Richmond Survey*, the tobacco industry and the department stores were studied and recommendations regarding the training of workers were made. Six trade studies were made in Minneapolis, department stores, dressmaking and millinery establishments, knitting mills, garment industries, laundries and home making.

The purpose of these surveys and studies of specific industries is to determine the kind and amount of general education and vocational training that may be given to prospective workers before they become wage earners, and to what extent education and training may be continued after they have become wage earners.

Studying an industry does not mean necessarily that a course of study and scheme of training workers may be set up. There is a growing need for studies which give information about many of the so-called unskilled industries in which women are employed as well as those demanding skill of the workers. The chief contribution of the study of the tobacco industry was ascertaining that there is no teachable content which the school could or should undertake to teach. Thus some of the studies give negative reports; others give much that is new and constructive and a better understanding of industry and its demands upon workers is gradually being brought about.

The National Society recognizes the fact that many of the trades, such as dressmaking, millinery, laundry work, waitress work, cafeteria and tea room work have grown out of the occupations of the home and, therefore, concern the American Home Economics Association as well as the National Society; the former in their relation to making a better home; the latter in their relation to profitable employment. Thus, an unavoidable overlapping of interests exists.

Reports for Troy, N. Y., Philadelphia, Richmond and Minneapolis have all touched upon Home Economics to some extent. In making studies and surveys such as those referred to, when the question of the homemaker and the employed worker in the homes arises, the committee prefers to deal with this in coöperation with women engaged in the Home Economics field. Thus, in Minneapolis the department of Home Economics of the University of Minnesota, and the Home Economics Department of the Women's Clubs had immediate charge of that part of the survey under the direction of the general Survey Committee.

FUTURE PLANS

Studies and surveys of women's work will doubtless continue for some time. More information about the woman wage-earner and the demands that work makes upon her is urgently needed and more comprehensive knowledge about the work of the woman in the home is also needed. The National Society is desirous of having these studies and surveys regarding the women's work reach out into as many occupations for women as possible.

The National Society is deeply interested in the training of teachers for vocational schools. It believes that professionally trained teachers

with interest and experience in industrial and trade work as well as trade workers with interest in and ability to teach the trade subjects are needed in the vocational schools. Academic subjects related to industrial or trade subjects as well as the general and cultural academic subjects should be taught by persons who in addition to professional training and skill in teaching understand and appreciate the demands of industry; physical education should be taught—such personal hygiene and preservation of health and strength as will make for happiness and efficiency; instruction in trade subjects as preparation for a vocation should in the main be taught by trade workers who have learned the trade processes by years of training and experience in the trade. A few teachers with technical preparation in practical subjects are also needed. Professional and technical training are well provided for, but instruction in teaching methods and class management for trade workers is only beginning to be developed.

Pratt Institute has conducted for the past two years a class for men's trades preparing for teaching positions under the direction of Wesley A. O'Leary. A course in teaching methods for women trade workers was given by the Secretary in Charge of Women's Work during the past summer for the Indiana University under the direction of the Department of Industrial Education. The course was given in Indianapolis, the nearest large trade center to the University. Thirty sessions of three hours each were held. Lectures, discussion and practical demonstrations made up the work of these sessions. Afternoons were used for excursions to places of interest in vocational work. Eighteen tradeswomen, selected from ninety applicants, were enrolled. Professionally trained teachers were not eligible to the course which was planned specifically for experienced tradeswomen who desire to teach in the vocational schools of the state. More work of this kind is greatly needed. Trade workers cannot forego earning for a year or two in order to prepare for positions that are not assured. Much may be done to build up good teaching standards and to preserve for the school the essential features of trade and industrial work by carefully organized short courses.

That the work for girls and women shows greater promise of advancement than ever before is shown in the following:

At a meeting of the Executive Committee in June, it was voted "To put special emphasis on the work for women during the next few years, in order that this phase of the problem may receive the same considera-

tion and study that has been given to the men's work." This action on the part of the Executive Committee of the Society gives great encouragement to the committee on women's work, and every effort will be made to use to advantage the additional interest and support thus gained to further the vocational training of our girls and women.

Interest in the problem all over the country is coming from other sources as well as from the National Society. It indicates that the time has come for greater and more extended development of the cause. Concerted effort among workers, employers, parents, teachers, and educational and social agencies will do much to hasten results and bring about better working conditions and a higher status for all women workers.

THE USE OF SCHOOL ROOMS AND EQUIPMENT

Sometimes, particularly in small schools where cooking classes would meet but once or twice a week, a room cannot be spared for such limited use and the work is not introduced. In the temporary building used for the first two years of its existence by the School of Education of the University of Chicago the school kitchen was equipped with common kitchen tables that could be rearranged, or removed if necessary, and the gas supply pipes had a screw connection with a shut-off cock at the floor, so that they could also be removed, leaving the room free for any purpose.

This is by no means ideal, but it is far better than no work at all; and the willingness on the part of the teacher to adjust herself to such conditions often aids in bringing about a spirit of coöperation in the school that counts for more than the most elaborate equipment.

In many better equipped schools it is still necessary to use the same room for cooking and sewing classes. From one such school this question came: "What is considered the best covering for cooking tables which are used also as cutting tables in sewing classes?"

In reply the suggestion has been made that valspar varnish be used or white enamel paint plus valspar varnish.

Are there any other suggestions?

THE MAKING OF A BUDGET

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Much is heard today about the desirability of conducting business on the basis of a budget prepared before the beginning of each financial year. Many urge that the budget be drawn up in great detail, specifying the amounts that may be expected from various sources of income and the amounts that officers shall be authorized to expend on various kinds of outgo. Usually a business cannot predict very clearly what its income is likely to be, and, although generally one can foresee more clearly what expenses are probable, a budget that specifies expenditures in much detail tends to hamper the executive officers in shifting their expenses from one line of activity to another when by so doing they might take advantage of opportunities for economy. The correct policy, of course, is to adopt a budget which shall restrict the executive officers within certain large limits, so that they may be held up to responsibility not to exceed certain proportions in the distribution of their expenses and not to exceed a certain reasonable limit for expenses as a whole. Draughting a budget is consequently not only important but difficult.

Any contributions to an understanding of the art of budget-making are sure to be received by executive and financial managers with great satisfaction. The JOURNAL is fortunate in its ability to publish a contribution of this type from Miss Vivian, of the Department of Mathematics in Wellesley College and sometime financial secretary of the Women's Educational and Industrial Union, of Boston. Miss Vivian's paper shows for several groups of items related to one of the lunch rooms of the Union the budget estimates, based upon the experiences of the past, and the methods by which those estimates were worked out. Since the preparation of the paper, the financial year which the estimates were intended to cover has come to a close, and the figures of actual operations have been compiled. A comparison of expectations and realizations is not only interesting but confirmatory of the process adopted in the budget making.

One table in this paper is of special interest, aside from its interest as a contribution to budget-making, in that it illustrates a principle coming to be recognized as important in drawing up graphic charts.

The usual graphic chart shows fluctuations in actual amount or numbers, and when two lines to be compared have not virtually identical bases, variations in one set of figures go up or down to a greater or less degree than do similar proportional variations in the other—simply because the general scale or base is larger or smaller. The same proportional variation, therefore, will show in a wider variation in one line than in the other; so that an exact parallelism in the proportional movement of the figures fails to show parallelism of lines on the graphic chart. If, however, the two lines are drawn not to represent actual figures, but to represent the logarithms of the actual figures, so that every variation of each line is adjusted not only to the same base but to all other variations, the rises and falls of the lines will be parallel if the variations are proportionately parallel, and will depart from parallelism otherwise. This is illustrated by the comparison between Tables IX and IXa in Miss Vivian's article. In Table IX, it will be observed, the rises and falls are very much larger than in table IXa, and, what is more important, the parallelism between the two lines is much less noticeable than in table IXa. In the former table, since the base is larger for one line than for the other, the same proportional variation gives a much larger actual variation. In Table IXa, the variations of the lines show the proportional variations of the figures, and we can see from the parallelism of the two lines that the proportional variation of figures was virtually parallel. In many charts, some of which have been published widely and used for drawing important conclusions, the variations have been so much affected by the differences in base that the conclusions drawn by readers untrained in statistical method have been extremely misleading. The JOURNAL is accordingly glad to have opportunity to illustrate the differences between the two methods in a case which can be seen not to exaggerate that difference and yet to show clearly the advantage of the logarithmic scale when comparisons are to be made.

AN APPLICATION OF STATISTICS TO BUDGET MAKING FOR LUNCH ROOMS

ROXANA H. VIVIAN, PH.D.

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Statistical methods of forecasting the future have been used in various lines of work and appear to be not without value in the making of budgets. The following study was made in response to a request for statistical confirmation of a budget estimate, submitted in December, 1914, of the surplus to be expected for the Social Educational Work of the Women's Educational and Industrial Union from the Lunch Department of the institution for the fiscal year ending September 30, 1915.

The figures available were those for the four years from 1910 to 1914, since the method of accounting was fairly homogeneous over this period. In Table I these figures are grouped under food supply,¹ salaries, other expenses, overhead charges and surplus. The total expenses and total receipts are also given.

TABLE I
Division of lunch receipts
(Figures taken from published Annual Reports)

	1910-11	1911-12	1912-13	1913-14
Overhead.....	\$11,721.41	\$12,432.21	\$10,331.15	\$10,720.04
Other expenses.....	6,155.70	7,736.76	9,126.05	8,710.76
Salaries.....	26,947.73	27,855.26	30,825.68	30,960.39
Food Supply.....	47,407.86	52,025.42	55,855.49	55,931.96
Total expenses.....	\$92,232.70	\$100,049.65	\$106,138.37	\$106,323.15
Surplus.....	3,780.39	3,151.23	7,572.10	12,607.61
Total receipts.....	\$96,013.09	\$103,200.88	\$113,710.47	\$118,930.76

The total receipts for the four years showed an increasing business so that there could be no application of the Law of Averages to the actual amounts in dollars. In order to make use of the average in any of these items the percentages (ratio to total receipts) were calculated and are

¹ The term Food Supply means throughout this study the Food Supply actually used during the month, and Food Percentage is used in the same way.

given in Table II. The average percentages have also been included in this table. The two sets of figures given in Tables I and II are represented graphically in Table III. Similar items, whether given in dollars or in percentages, are placed in the same position in each column and with similar rulings.

TABLE II
Percentages

	1910-11	1911-12	1912-13	1913-14	AVERAGE
Overhead.....	12.2	12.0	8.9	9.0	10.5
Other expenses.....	6.4	7.5	8.4	7.4	7.5
Salaries.....	28.1	27.0	26.9	25.8	26.9
Food supply.....	49.4	50.4	49.1	47.2	49.0
Surplus.....	3.9	3.1	6.7	10.6	6.1

The averages had to be used with caution and in conjunction with all the information that the circumstances afforded, as the legitimate and complete application of the Law of Averages depends on a larger number of cases than were at our disposal. It was also necessary to bear in mind that certain items had been a good deal affected by the idiosyncrasies of Union bookkeeping, notably the overhead charges. These were abnormally high in the first two periods and later were arbitrarily reduced; but the effect of the overhead variation, as seen in Tables I, II and III, appears, of course, in the item of surplus rather than in the expense percentages. No use was made of the overhead percentage in this study.

The problem in making the Lunch Budget for the present fiscal year was to determine the following items: Amount of the year's business; overhead charges; salaries; other expenses; and food supply.

The probable volume of business was a difficult figure to estimate. September, 1914, showed an increase of \$302.64 in receipts over September, 1913, and October, 1914, an increase of \$252.88 over October, 1913; but these figures did not seem to be significant in view of the increase the business had been showing since October, 1910, as shown in Table IV. The decreases of \$725.34 in November, 1914, and of \$1139.04 in December were far beyond the normal and demanded more serious attention. Table IV shows the unusual extent of this decrease. The Director of the Lunch Department felt that a decrease that would average

TABLE III

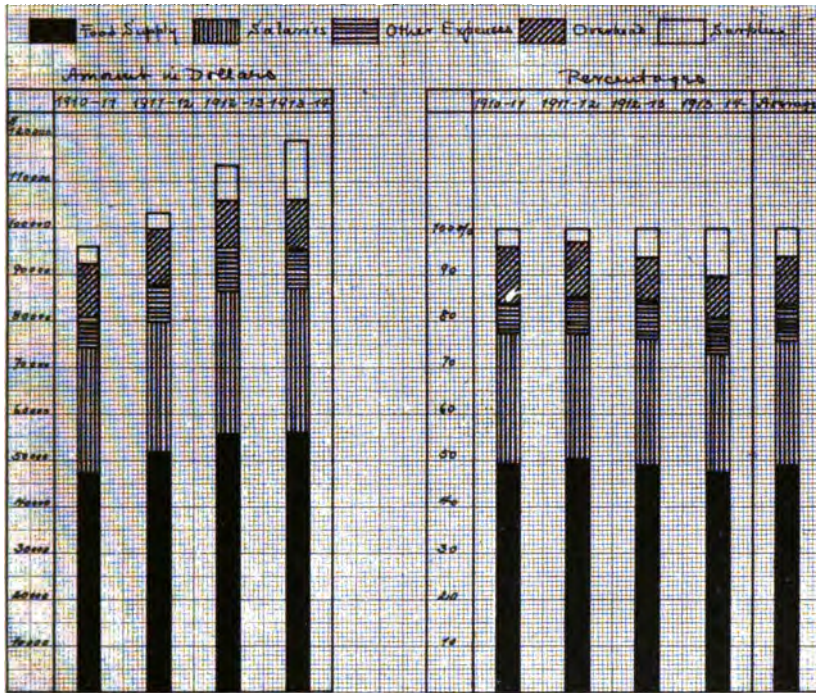
Division of receipts in the lunch department

TABLE X

Comparative variation in food percentages in the lunch department and in the Annalist Index numbers. Food percentages, July 1912, to December, 1914. _____

Annalist Index numbers, January, 1913, to December, 1914.

(In order to make the variations comparable the vertical unit for the food percentage is three times the unit for the index numbers.)

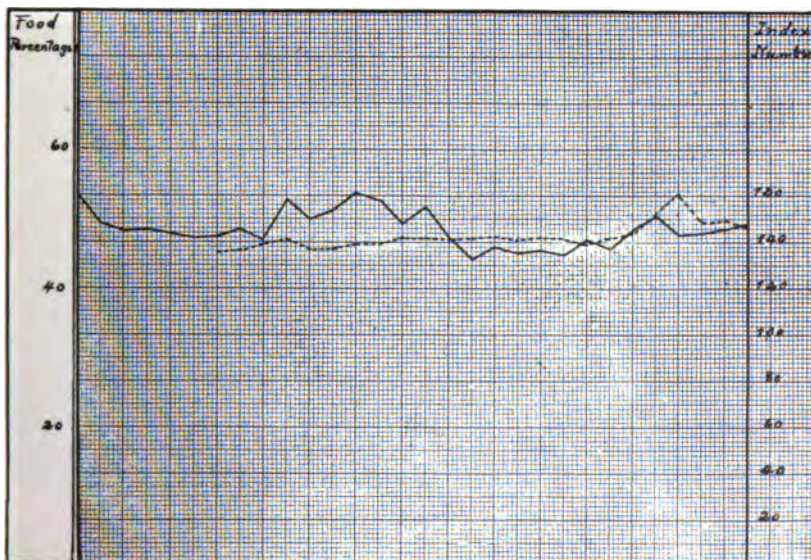


TABLE IX

Comparative variation in attendance and food supply. Attendance, July, 1912, to December 1914. ——— Food Supply, July 1912 to December 1914.

(In order to make the variations comparable the vertical unit for the attendance is three times the unit for the food supply.)

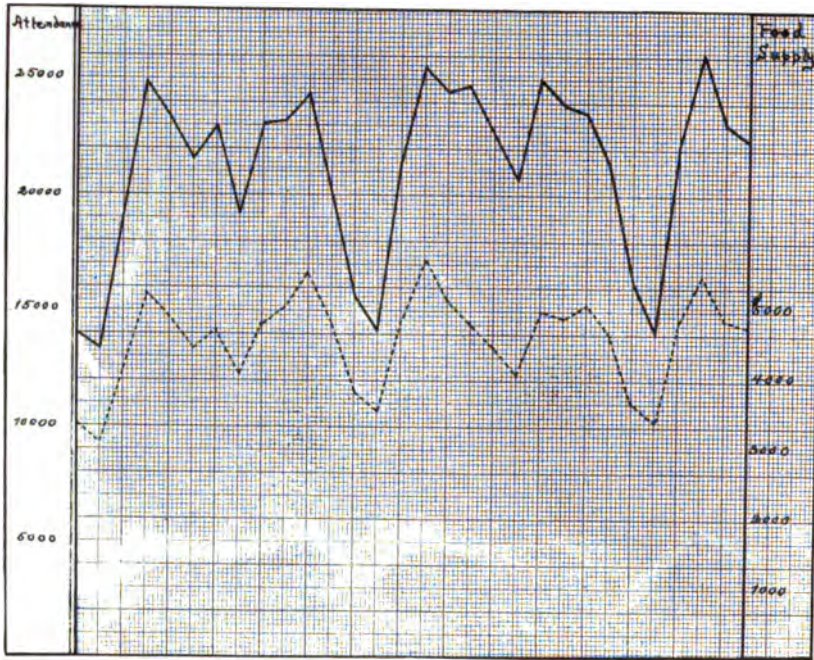


TABLE IXa

Logarithmic form of Table IX

(The marginal figures are the logarithms. The natural numbers might have been used, as in Table IX.)

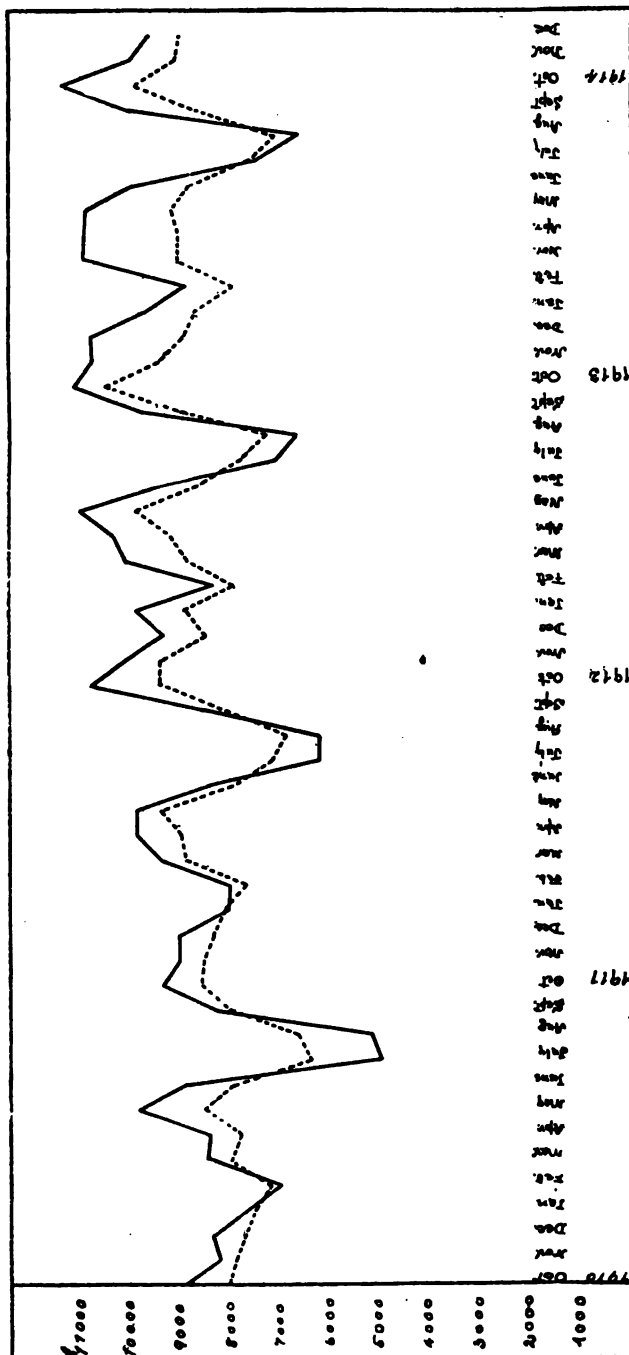


TABLE IV

Receipts and expenses in the lunch department from October, 1910, to December, 1914.

Receipts. —

Expenses.



\$500 a month was to be expected in the year's receipts, or that we should look for a business of not more than \$113,000. A more sanguine estimate would be \$115,000. In order to show the effect of more or less business on the amount of surplus turned in by the Department, estimates were made on yearly receipts aggregating, respectively, \$113,000 as in 1912-1913, \$119,000 as in 1913-1914, and \$115,000, the highest figure that seemed within the range of probability for the present year.

The overhead charges were known very definitely for this year, including as they did the fixed charges for rent, for services of the financial office and the purchasing agent, and for depreciation. No matter what the volume of business amounted to the Department would have to pay about \$10,400 for this item of expense.

The salary demand was estimated to be \$1000 more than in 1913-1914 for the same volume of business. That is, a business of \$119,000 would mean a salary expense of \$32,000. The Director felt this might be cut to \$31,600 on a business of \$115,000, or to \$31,400 on the \$113,000 basis.

It remained to determine the amount required for food supply and other expenses in the three instances, and here we could do no better apparently than to use the average percentages in each case as shown in Table II. For other expenses the average of 7.5 per cent of the receipts seemed a reasonable allowance and the figure was so calculated in Table XI.

TABLE V
Food supply in lunch department

	1912	1912-13	1913-14	1914-15
October.....		\$5,250.52	\$5,786.39	\$5,511.70
November.....		4,898.71	5,141.72	4,891.18
December.....		4,473.60	4,808.48	4,739.68
January.....		4,726.65	4,481.20	
February.....		4,088.86	4,064.49	
March.....		4,810.51	5,009.46	
April.....		5,050.89	4,909.48	
May.....		5,562.11	5,121.08	
June.....		4,819.88	4,640.94	
July.....	\$3,394.91	3,860.24	3,707.39	
August.....	3,119.15	3,571.58	3,419.95	
September.....	4,169.91	4,838.63	4,845.23	

In this particular business the food supply is the largest and most significant item of expense and the average percentage was not adopted until every available factor affecting the food supply had been examined.

TABLE VI
Attendance in lunch rooms

	1912	1912-13	1913-14	1914-15
October.....		24,864	25,544	26,203
November.....		23,440	24,259	23,139
December.....		21,569	24,742	22,416
January.....		22,932	22,675	
February.....		19,206	20,729	
March.....		23,153	25,031	
April.....		23,216	23,935	
May.....		24,295	23,601	
June.....		19,962	21,295	
July.....	13,896	15,535	16,327	
August.....	13,301	14,177	14,120	
September.....	19,060	21,471	22,208	

TABLE VII
Food percentages in lunch department

	1912	1912-13	1913-14	1914-15
October.....		48.6	51.6	48.1
November.....		48.0	47.5	48.4
December.....		47.5	44.5	49.1
January.....		47.6	46.0	
February.....		48.6	45.2	
March.....		47.1	45.7	
April.....		52.9	45.0	
May.....		50.0	47.1	
June.....		51.3	45.9	
July.....	53.4	53.6	48.4	
August.....	49.3	52.7	50.4	
September.....	48.4	49.3	47.8	

Tables V, VI and VII give the food supply, attendance, and food percentages, from October, 1910, to December, 1914. Table VIII gives the Annalist index figures for commodity prices by months from January, 1913, to December, 1914. These index figures,² published weekly

² For methods of constructing index numbers see Bowley, *Elements of Statistics*, p. 217.

in the New York Times Annalist since January 1913, appeared to be the best outside factor to consider. They are sensitive to price movements, being based upon twenty-five food commodities so selected and in such amounts as to give each of the large food elements a normal influence, and they are practically independent of the peculiar characteristics of any one business. Since they are in percentage form, a comparison with the food percentages was the most convenient one to make. Table X presents the figures of Table VII and VIII graphically, while Table IX shows the figures of Tables V and VI in a similar way. The former did not reveal any close connection between food percentages and general price movements, but Table IX, as we should expect, exhibited a very close correspondence between attendance and food supply.

TABLE VIII
Annalist index numbers

	1913	1913-14	1914-15
October.....		141.80	149.66
November.....		141.50	150.01
December.....		141.84	146.78
January.....	136.3	142.45	
February.....	136.7	141.27	
March.....	139.1	142.33	
April.....	141.1	141.12	
May.....	137.1	139.23	
June.....	136.9	141.52	
July.....	138.9	144.88	
August.....	139.0	152.11	
September.....	142.7	160.77	

TABLE XI
Estimated budgets

Receipts.....	\$119,000	\$115,000	\$113,000
Items of expense:			
Overhead.....	\$10,400	\$10,400	\$10,400
Salaries.....	32,000	31,600	31,400
Other expenses.....	8,925	8,625	8,475
Food supply.....	58,310	56,350	55,370
Surplus.....	\$ 9,365	\$ 8,025	\$ 7,355

The correspondence was even more apparent in Table IXa, which is drawn on the logarithmic³ scale and shows the proportional changes from month to month.

These figures and charts led to no better prediction for the percentage to be used for the food supply than the average. There seemed no reason to estimate below this figure, since it had to be admitted that the Department was not likely to do as large a business as in 1913-1914 (an important factor in determining the food percentage), nor could it expect to buy food commodities at as low a price as in that year; while to adopt a larger percentage appeared unduly pessimistic. Accordingly the expense for food supply was figured at 49 per cent of the assumed receipts.

The results⁴ of these estimates for the three cases are given in Table XI and appear to be justified by previous experience. Comparing, for instance, the actual surplus for 1912-1913, when the business was \$113,000, with the figure in Table XI we have \$7572.10 against \$7355. If in Table XI we adjust the surplus there predicted for a business of \$119,000, the size of the business in 1913-1914, by taking into account the \$1000 that was added for salaries and the advantage due to a food percentage of 47.2 per cent instead of 49 per cent, namely, \$2142, the surplus would stand at \$12,507, which is a close approximation to \$12,607.61, the actual surplus for that year.

The budget previously submitted after a less detailed and statistical analysis led to the expectation of a surplus of \$8000. The conclusions drawn from this more extended study were as follows: very good conditions might possibly bring an \$8000 surplus on a \$113,000 business; if the business ran to \$115,000 it was fairly safe to expect an \$8000 surplus; and there appeared to be no justification at the time the study was made for setting any higher figure.

The above method is thus doubly confirmed by applying it to the business of preceding years and by comparing it with an estimate obtained by a totally different method. There seems no reason why it should not be used with satisfactory results in any business where accounts are so kept as to afford the necessary statistical material.

³ For method see Bowley, *Elements of Statistics*, p. 188.

⁴ It should be noted that the results of this method were not known until Table XI had been fully calculated, each item being determined independently on the best available information that affected it alone.

Supplementary Note. It is interesting to compare the actual figures with the estimates on what appeared to be the most probable volume of business in December, 1914, when the prediction was made.

	ESTIMATED	ACTUAL	
Receipts.....	\$113,000	\$111,385.86	
Items of Expense:			
Overhead.....	10,400	10,385.61	9.3%
Salaries.....	31,400	31,383.88	28.2%
Other Expenses.....	8,475	8,443.04	7.6%
Food Consumed.....	55,370	53,352.07	47.9%
Surplus.....	7,355	7,821.26	7.0%

The attendance was 251,536 against 264,466 in the preceding twelve months, justifying the estimated decrease in receipts. The total receipts were as close to the estimated \$113,000 as could reasonably be expected in a figure depending on so many factors beyond the control of the Director. The overhead charges were of course close to the estimate, and the salaries were practically settled in advance for the *minimum* amount of business. The other expenses, estimated on the average percentage, varied only one-tenth of 1 per cent (being 7.6 per cent of the receipts instead of 7.5 per cent), indicating the unusually steady management of the business. The Annalist index figures for the twelve months do not appear to have been influential, but the fact that the food consumed was 47.9 per cent instead of the estimated 49 per cent supports the conclusion that good purchasing and care in serving are more important than general price movements in keeping this figure low. The *sanguine* estimate for surplus on a business of \$113,000 was \$8000, or about 7 per cent: the actual surplus was 7 per cent on \$111,385.86.

A STUDY OF CONDENSED AND EVAPORATED MILKS

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The use of condensed and evaporated milks is very widespread at the present time. The extent to which the industry has developed in this country during recent years may be realized when it is known that about fifty years ago there were only four or five factories producing condensed milk in the United States. Less than fifteen years ago there were fifty factories, and today there are over three hundred establishments having a capacity of 15,000,000 pounds daily. It must be evident that the ways in which condensed milk is used have increased very materially. Formerly it was regarded as a food product to which recourse could be had when it was impossible to obtain fresh cow's milk. At the present time, however, condensed milk is widely used as a substitute for fresh cow's milk even though the latter is available. It is used to a considerable extent as a food for infants and invalids, and very largely in the manufacture of ice cream.

The present extensive use of condensed milk products suggests some inquiry into the character and quality of the milks found on the market. A great many people are led to believe that condensed milk is cheaper than ordinary fresh milk. Obviously this can not be true, for it would not be possible to manufacture a condensed milk having the food value equivalent to that of whole milk at a cost less than that of whole milk. It is possible, however, by the removal of part of the butter fat to manufacture a preparation having a lower food value.

It is true that the price of condensed milk has decreased with improved and cheaper methods of manufacture. In 1880 the average value per pound in the United States was twelve cents and 1890 it was nine cents. At the present time it is slightly more than nine cents, because of the fact that standards have been more definitely set. A price as high as thirty cents was reported in Massachusetts in 1890. Theoretically the differences in price should, to a certain extent, furnish a criterion of the quality of the product. This was probably true to a greater extent formerly than at the present time when there is greater uniformity in the quality of the different brands manufactured.

Studies have been made to determine whether the use of condensed milk is based on economic principles. Such a study was undertaken

by Jordan and Mott, who examined a number of brands of milks sold in Massachusetts. As a result of their work, they found that if these milks were diluted to make a quart of standard Massachusetts milk containing 3.35 per cent of butter fat, they would cost more than ordinary milks and sometimes more than certified milks.

Facts like the above and the printing of certain misleading statements on the labels of some brands of condensed milk, make it clear why definite standards need to be set. Such a statement as the following, "Diluted with three parts of water makes it equal to ordinary cream," appearing on a certain brand of evaporated milk which on chemical analysis was found to contain 7.2 per cent of butter fat (equal to 1.8 per cent if diluted as directed), is an illustration of fraudulent labeling.

Standards have been adopted by a number of states, though there are still several which are without any such rulings. A national standard has been under discussion for some time. At a recent meeting of a Joint Committee on Definitions and Standards from the American Association of Dairy, Food, and Drug Officials, the Association of Official Agricultural Chemists, and the United States Bureau of Chemistry, Department of Agriculture, the following standard was adopted:

It is recommended that the standard for "condensed milk," "evaporated milk" (Cir. 19, Office of the Secretary, United States Department of Agriculture, p. 6, B. a, 6) be changed to read as follows:

Condensed milk, evaporated milk, concentrated milk, is the product resulting from the evaporation of a considerable portion of the water from the whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, and contains, all tolerances being allowed for, not less than twenty-five and five-tenths per cent (25.5%) of total solids and not less than seven and eight-tenths per cent (7.8%) of milk fat.

This standard does not include any statement in regard to the degree of dilution necessary to render the condensed product equivalent to whole milk, a matter which has been considered of sufficient importance to be incorporated into the standard of at least one state. Only by a statement of this kind can information be conveyed to the public as to the real quality of the milk.

The bacteriology of condensed milks is a matter which has received comparatively little attention. One advantage that has been claimed for condensed milks, is that they are "sterile," but this is not always the case, particularly with regard to sweetened condensed milks. It would be natural to suppose that the process of manufacturing would kill all the bacteria present in the original milk, but when it is remembered that the process of condensing is done at a temperature considerably below 100°C., it is not difficult to understand why some bacteria survive. The condensing process proper consists in heating the milk, after a preliminary pasteurization, in vacuum pans in which the boiling temperature is much lower than under conditions of ordinary atmospheric pressure. The so-called evaporated milks, which are simply milk concentrated to one-half to one-fifth of the original volume, without addition of sugar, are subjected, after canning, to a final heating which, if conducted properly for a sufficient length of time, should kill all vegetative forms as well as all spore-bearers. However, bacteria have been found in these milks by several observers.

The sweetened varieties of condensed milks are quite generally conceded, by all those who have investigated the subject, to contain bacteria. These milks on account of the high sugar content, cannot be heated to a high temperature after canning, as are the unsweetened varieties, and therefore it follows that organisms which survive the pasteurizing process are often found in the condensed product.

As far as investigated, the bacterial content of condensed milk appears to be limited, although counts as high as 1,000,000 per cubic centimeter, have been found in a few cases. It is doubtless true that the viscosity of the medium, and, in the case of the sweetened milks, the high sugar content, tend to inhibit the growth or multiplication of certain of the organisms present. Andrewes in England, however, has proved experimentally that the organism *Staphylococcus aureus* could multiply enormously in condensed milk, under both aerobic and anaerobic conditions.

The kinds of bacteria which have been found in condensed milk bear a close relationship to those found in ordinary fresh milk, or, more properly speaking, to those found in pasteurized milk. The organisms present are those which survive the pasteurizing process and also those which may enter from the air and from other sources in the processes of condensing and canning. The following varieties of bacteria have been isolated by different workers: *Streptococci*,

Staphylococci, *B. Enteriditis sporogenes*, lactic acid producing bacilli, *B. Subtilis*, *B. Mesentericus*, and yeast cells. *B. Coli* have been reported in one or two investigations.

The Streptococci isolated have been shown by their fermentative reactions in various carbohydrates to include those varieties which are designated as milk Streptococci and which are often present in normal milk, as well as varieties derived from cow manure. *Staphylococcus (pyogenes) aureus*, a pus-producing organism was recently isolated by Andrewes in almost pure culture in a number of cans of a certain European brand of condensed skimmed milk. He considers the presence of this organism in such large numbers as objectionable and a ground for condemnation. A number of investigators have examined condensed milks for tubercle bacilli, but so far no true tubercle bacillus has been isolated.

The bacteriology of condensed milks is a subject which has not been thoroughly investigated. Not enough tests have been made to say definitely what is the significance of bacteria in such milks. The fact that bacteria are present may be of no more significance than that they are present in pasteurized milk, aside from the fact that condensed milks are not always sterile as they purport to be. However in view of the fact that condensed milks are often used as infant food it is necessary that precautions be taken to obtain an absolutely safe product. Cheap grades of milk which contain a deficiency of butter fat and which are highly contaminated are as unsuitable for condensing as for other purposes. Condensing no more than pasteurizing can make a good milk out of a poor one and therefore it follows that only the best milk which comes up to the standards required of whole milk should be used in the manufacture of the condensed products.

FOR THE HOMEMAKER

AN EXHIBIT OF INSTRUCTIVE VISITING HOUSEKEEPING

JANE TEARE DAHLMAN

*Roxbury Charitable Society,
Roxbury, Mass.*

The first exhibit of Instructive Visiting Housekeeping in Boston was held at the Twentieth Century Club on May 6, 1915. The exhibit, which considered only one of the problems of the instructive visiting housekeeper, the food problem, was prepared by a few social workers assisted by teachers and students of Simmons College. A brief history of this exhibit and the events that led up to it will be of value to housekeepers and club women who are interested in this work.

In January, 1915, the New England Home Economics Association appointed a social workers committee, hoping to interest the social workers and public health nurses in Home Economics. At the first meeting, in February, Miss Shaw of Denison House gave a talk and demonstration on Syrian Foods; Mrs. Lydia Fillides, formerly a teacher in the American College in Smyrna, followed with a talk on Grecian Foods. Mrs. Fillides had prepared several Grecian dishes and delighted her audience with a sample of each. Mr. Shooshan, one of our successful restaurateurs, told about the Armenian foods. He, too, brought with him several of his native dishes, of which each one was given a generous serving. The last two speakers pointed out many of the wasteful extravagances of American cooking. They also spoke of the comparatively little time and thought that the American housewives give to the feeding of their families.

In March Rabbi Levi lectured on "The Dietary Laws of the Jews." In April Mr. DeMarco gave a picturesque and instructive talk on the "Food of the Italians," and Mr. Paolera served several Italian dishes which he had specially prepared.

At each of these meetings much interest was shown and many questions were asked by both the public health nurses and the settlement workers. The Instructive Visiting Housekeepers felt that the food problem ought

not to be dropped with the consideration of these five nationalities in a cosmopolitan city like Boston, but should be continued so that social workers dealing with families of other nationalities would have some basis upon which to work intelligently. Consequently these two enthusiasts mapped out a plan approved by the President of the New England Home Economics Association, which, with various modifications and changes, was successfully materialized just six weeks from its inception.

A meeting was called April 1 to discuss plans for an exhibit on the "Feeding of the Family of Small Income." Those who attended represented the Cambridge Associated Charities, the Ruggles Street Neighborhood House, the Roxbury Neighborhood House, the Norfolk House Centre, the Jamaica Plain Neighborhood House, and the Roxbury Charitable Society. Each member of this group volunteered her services, the work was divided, and immediate action was enthusiastically entered upon.

Each following Thursday noon this group met at lunch and discussed the problems of the work, making many necessary changes. They were assisted by members of Simmons College, the Executive Board of the New England Home Economics Association, Hale House, Wilcox Hall, and other organizations.

Miss Stern and Miss Spitz gave the committee the privilege of using menus for one week from their book entitled "Food for the Worker," which they are now compiling. In this book the cost is computed at 20 cents for each person for each day, exclusive of one quart of milk daily for each child to drink. They gave not only the menus, but the caloric and cost computations and the food analysis.

Miss McMullen of Roxbury Neighborhood House made separate menus for "Dinner Pails" and "Working Girls' Lunches." She compiled for one week the food analysis, the caloric value, and the cost of each of these, a piece of work which attracted much attention. A full dinner pail and an attractive lunch is always a problem to the housewife.

Dr. Blood and the students of Simmons College worked with the Overseers of the Poor grocery order and demonstrated the fact that a family of five can sustain life for one week on \$2 worth of highly concentrated, although not the most attractive food, plus one quart of milk a day. They then demonstrated the best use of an extra dollar and a half added to this. In both instances they gave the amount of each kind of food, the cost, the caloric value, the protein, and the mineral content. Dr.

Blood made it quite clear, however, that she does not advise that people live continuously on this diet, for health and efficiency require more food and more variety; but she maintains that it can be done for a short time, if circumstances demand it,—a valuable basis for future, as well as for present work.

Miss Lundberg, with the aid of the students of Simmons College made a list of meat substitutes, giving their protein content and cost compared with meats. Beneath this chart was a table of most attractive food which held the attention of many who wish to cut down the expenditure for meat. Miss Helen Warren, Teacher of Domestic Science at St. Joseph's Academy gave an exhibit of the food values of cereals and their cost. She showed very clearly the difference in cost between cereals bought in bulk and in package form. She also demonstrated many attractive ways of serving cereals other than as breakfast foods.

Miss Spellman of the Elizabeth Peabody House showed a kitchen fitted up at low cost, of particular interest to brides-to-be, as well as to housewives who wish to replenish. At a table near the door publications on domestic science were exhibited.

The exhibit was open from eleven in the morning until six in the afternoon. At the four o'clock meeting Mr. Robert O. Small, Deputy Commissioner of the State Board of Education, and others spoke. So much interest was shown by social workers and by the public in general that the room was early filled to its capacity and many could not obtain admission to the hall at the time of the meeting.

The Children's Aid Society has sent a very encouraging letter and a check for \$25.00 to help pay the cost of the publication of the tabulations of this exhibit. Several requests have been received for this material from persons who saw or heard of the exhibit in Boston and from delegates to the National Conference of Charities and Corrections in Baltimore, where the charts were shown by Mr. Estabrook of the Roxbury Charitable Society and Mr. Warren of the Boston Associated Charities. The exhibit was displayed in the room adjoining the large auditorium in which the meeting on "The Family and Community" and several of the general sessions were held. They have also been shown at a vocational conference in Boston at an exhibit of the New Bedford Industrial School, at the Summer Schools of Teachers' College and Simmons College.

HOUSEHOLD CHEMICAL TESTS FOR TEXTILE FABRICS

JEAN G. MACKINNON

Assistant Professor Textile Chemistry, Iowa State College

The usual chemical tests for the identification of textile fibers call for a five per cent solution of potassium hydroxide for silk and wool, and for sulphuric acid for cotton and linen. Since these materials are seldom found in the household, such tests have been of little value to the home. At Iowa State College the following study of tests has been made, using only materials which are found in the average home and giving in familiar household terms the amount of the material used. The washing powders used were chosen as typical ones in ordinary household use. Other powders of the same strength would serve as well.

Tests for Wool and Silk

Materials	Amount Used tablespoonfuls	Time minutes
Washing soda.....	4	20 to 30
Pearline.....	5	20 to 30
Star naphtha.....	5	20 to 30
Gold dust.....	5	20 to 30

The washing soda must be rolled to a powder with a rolling pin to insure accurate measurement; this is easily done if the supply has been in the house for some time. Use a sample of fabric an inch and a half square. Add the washing soda or washing powder to a pint of soft water in a granite pan and boil the sample for the time indicated in the table. This boiling should be carried on slowly to avoid spattering and more water should be added from time to time to replace the water lost by evaporation during boiling.

A gelatinous result will be obtained in every case, unless the fabric is all or nearly all cotton. Transfer the sample with a wooden spoon to clear water and rub between the finger tips. The gelatinous material will disappear in the water, while any cotton threads will remain unchanged. That the sample retains its shape in this way is an advantage, because as it is rubbed in the water it can easily be seen just what threads in the warp and the filling are cotton. A firmly woven all-wool fabric does not form a soft jelly at the end of twenty minutes. This shows the necessity of boiling thirty minutes as indicated in the table.

In the case of silk, characteristically greater resistance to boiling alkalies than that of wool is shown with the washing soda and the washing powders. In the silk and cotton mixtures, a gelatinous condition of the silk will be found at the end of twenty-five minutes, the boiling being carried on with the same precautions as with wool. An all true silk sample will be greatly decreased in strength with thirty minutes' boiling and a true silk and Tussar silk mixture will be decreased in strength as far as the true silk threads are concerned.

COTTON AND LINEN

It is very difficult to find household chemical tests to distinguish between cotton and linen, since these tests depend on strong acids. The acetic acid of vinegar and the lactic acid of sour milk are not strong enough to bring about any change in the vegetable fibers. However, many households use oxalic acid and muriatic acid for stain removing purposes and these acids were used in the following tests.

In using muriatic acid, thoroughly wash the sample of fabric and rinse it in hot, soft water to remove the finishing material. Dry thoroughly and place in hot muriatic acid for one minute. Transfer quickly to fresh water. If the fabric is all cotton, the sample will drop into minute pieces, while if it is linen the shape will remain unchanged. The special precaution to observe in this test is the accurate timing of the experiment and care in transferring the sample from the acid to the water so that no holes are in the fabric.

In using oxalic acid, make a saturated solution by adding the crystals to water till some remain undissolved. Pour off a half pint of the clear liquid and boil the sample in this liquid for fifteen minutes. Then remove and allow to dry without washing. Test the strength of the fabric. Cotton samples will be found to be very brittle, while linen remains comparatively firm.

Neither the muriatic acid nor the oxalic acid test is valuable for a cotton and linen mixture, except that there is a difference in degree of the weakening of the fibers. The muriatic acid test was found to be useful in distinguishing a cotton fabric that is claimed to be linen, the chief form of adulteration of cotton and linen fabrics.

POTATO STARCH AND ITS USE IN THE HOME¹

The object of this recipe is to make possible the use of the culls and bruised and otherwise unmarketable potatoes and transform them into a desirable and practical product for home use.

EQUIPMENT NEEDED

Two clean pans, vats, or galvanized tubs, one large pan, one cylindrical grater, plenty of clean water, and wiping cloths. Instead of the grater a sausage grinder can be used to advantage for the grating of the potatoes. When using the sausage grinder it will be necessary to cut the potatoes into small pieces before feeding into the grinder.

RECIPE FOR MAKING HOME-MADE POTATO STARCH

Wash potatoes thoroughly, using plenty of water and a vegetable scrubbing brush. Seat yourself in a convenient position, with a vessel containing potatoes at one side and an empty vessel for the gratings on the other. Place dish pan with grater on low small table or upon your lap. Without removing the skins, grate your potatoes by hand or run them through the sausage grinder. Empty gratings into the second tub or vessel. Continue this operation until your vessel is one-half or two-thirds full of pulp, or until your potatoes have been used.

Pour clean water over the gratings. Stir well, so as to saturate every particle with water. Allow to stand for a little time and then remove the peelings and other floating material from the top of the water. Stir again, add a little more clean water and allow the same to stand for several hours or over night. The starch granules will settle to the bottom and all pulp and potato skins will rise to the top of the water or settle on top of the starch granules. Remove the water carefully, also the pulp and skins. Scrape the dark coat off the top of the starch formation, being careful not to remove any of the starch.

A second time pour fresh, clean water over the starch. Stir thoroughly. Allow to stand for several hours or over night. Remove water and pulp as before and add another application of water. Continue this as often as is necessary to render your starch perfectly white and free, not only from pulp but from all sand or sediment of any kind which is not pure starch.

¹ From the Office of Extension Work, North and West.

This operation can be abbreviated somewhat by rinsing the first time and then straining the pulp, starch, and water through cheesecloth or cloth of finer mesh.

Potato starch is a healthful food and can be used in many ways for food purposes, in the making of puddings, salads, milk dishes, etc. It is an easy method and one that children will enjoy, an excellent laboratory experiment or demonstration for the school or Home Economics department, with the idea of furnishing recipes and preparing potato-starch dishes.

In nearly every potato section of the United States thousands of bushels of cull potatoes are wasted every year which could just as well be utilized in this way through the manufacture of potato starch.

Starch-making demonstrations and demonstrations in the preparation of dishes are recommended especially for fairs and club festivals in the interest of potato club work.

PROFITS IN COMMERCIAL BAKING, AND THE HOUSEKEEPER

An article, published not long ago in the *Canadian Baker and Confectioner*, which deals in a practical manner with the changes of technique in baking necessitated by new materials and methods, contains the statement that to make a successful baking business a baker must produce baked goods to show a gross profit of at least 50 cents on the dollar for the work turned out. This is a trade estimate based on what the baker regards as a reasonable profit, it would seem. Presumably it includes cost of material, fuel and labor. Is there not something in this statement for the housekeeper to think about? When she buys baked goods, does she save her own time at an increased cost of 50 per cent, as compared with home production? Before we can be sure that the above figure is correct, we need careful studies of the time (and its value), materials and fuel, needed for cake, bread, etc., made at home, and the local prices of similar things ready made. Will not more of our readers help gather such data?

THE COMPARATIVE COST OF HOMEMADE AND BAKER'S BREAD

ANNABELLE MARSH

Sent in response to the article "Made at Home" by Miss Anna Barrows, published in the February (1915) JOURNAL.

The grocer delivered at the door a loaf of bread weighing 24 ounces for which I paid 10 cents.

The question came up whether I could make bread of as good or better quality for less money, including materials, time and fuel in the cost.

Using measuring cups, bread mixer, scales and clock for equipment, I experimented. The table below gives the result.

In the first place, instead of making one loaf I made three, not too many for a family of six such as mine to use, and so saved time and fuel. The same amount of coal that would have been used for one loaf baked three loaves. The time required for making three loaves at once was less than would be needed in making one at three different times. The method used was the straight dough method. The bread was mixed and kneaded, allowed to rise over night, then put into tins, and when light, baked. The entire bread was weighed after cooling. In calculating the cost of materials, the proportion was used which would produce exactly the weight of the baker's bread. The same ratio was used for fuel and time.

The time given included the manipulation of the bread and washing the bread mixer. The calculation of its value in money was based on actual wages received by a woman doing housework at \$25 a month, working ten hours a day.

The fuel used was coal. The fire was kept burning continually. The amount weighed and calculated was the extra coal required for heating the oven above what would have been used if the fire had been kept in check.

Materials:

3 tablespoonfuls sugar at 18 lbs. for \$1.....	\$0.0052
3 tablespoonfuls lard at 15 cents per lb.....	0.014
13 cupfuls flour at \$7 per bbl.....	0.1183
1 magic yeast cake at 4 cents per box.....	0.005

\$0.1425

Fuel:	
3 lbs. coal at \$7.25 per ton.....	\$0.0108
Time:	
33 minutes at \$0.08 per hour.....	0.044
	\$0.1973
Weight of bread	108 oz.
Weight of baker's bread.....	24 oz.
Cost of 24 oz. of home made bread.....	\$0.0438
Cost of 24 oz. of baker's bread.....	\$0.10

The quality of the homemade was equal to the baker's, but slightly more tender.

BACTERIA IN THE AIR

To the air has long been attributed a subtle potency to incite disease when suitable conditions prevail. One need not go back far in history to reach the days when "night-air" and "sewer-air" were feared as the bearers of indefinable dangers to health. The discovery of the rôle of micro-organisms in the transmission of disease has largely changed this attitude. It is true that air from certain localities, such as soils or sewers, may contain an admixture of gaseous impurities—carbon monoxid and dioxid, marsh gas and hydrogen sulphid—which are not wholesome to man. But these admixtures are, in all except the most unusual circumstances, so small in amount as to have little if any harmful significance for health. The organic or solid impurities of the air give more cause for alarm, for they include the living bacteria. In sewer-air the proportion of micro-organisms is usually less than [in the air] of streets and houses, and the species are usually harmless. The movement of air in sewers is rather slow, so that abundant opportunity is afforded for the suspended particles, including [micro-organisms as well as minute particles of earth and other things which make up "dust,"] to become deposited on the moist surfaces.

There is a growing conviction that in the majority of cases of so-called "air-borne" disease it is not the particulate constituents of the atmosphere that are directly responsible for the transmission of disease. Suspended particles, including bacteria, may, of course, be sprayed

about by the acts of coughing and sneezing and thus aid in the dissemination of diseases, particularly those of the respiratory tract. But as a rule it appears that the diseases conveyed through the air are carried through the agency of insects acting as vectors or as hosts for the infective parasites. In many hospitals, therefore, the "air-borne" diseases are now treated side by side in the same ward without fear of greater transmission than if they were isolated in separate wards. Attention is centered on the possibility of the carrier agency, animate or inanimate, rather than on the atmosphere as such. As a recent speaker expressed a phase of it, the problem is one of wire screens more than of ventilation. Yet a recent systematic study by the New York State Commission on Ventilation showed clearly that the air of occupied spaces such as factories, schools and offices contains more bacteria than that of open spaces in the city or country. It is significant that the increase in streptococci manifests itself promptly in the occupied spaces. Whereas in country or city air there are rarely more than ten of this group of micro-organisms per hundred cubic feet of air, the number may rise to more than forty in factories.

While there is a rapidly growing tendency, supported by much convincing evidence, to teach that ventilation has nothing whatever to do with either the transmission of the so-called "air-borne" diseases or the lessening of their transmission and the opinion is freely expressed that transmission by way of the air is of infinitely less importance than transmission by inanimate and animate carriers that have been in intimate contact with patients, yet the indisputable facts just cited regarding the comparative distribution of certain objectionable bacteria in occupied spaces still deserve respectful consideration in relation to the problems of public health.—*The Journal of the American Medical Association.*

EDITORIALS

The Journal. The success of the 1915 venture of issuing the JOURNAL ten times a year has made it seem possible to go a step further. We are glad to announce that the JOURNAL will be issued every month during 1916.

Home Economics and Business. In business the methods which survive are those which have been found to justify themselves. The fact, therefore, that railways are expending increasingly large sums of money in extension teaching in Home Economics is evidence that they find it profitable. Such teaching in agriculture has long been recognized as a means of promoting the prosperity of railways by developing the farming districts through which they pass. Home Economics was looked upon at first as more experimental, but the fact that it is now almost always found side by side with agriculture in this as in other kinds of teaching, indicates that better homes, like better crops, are considered necessary to prosperity.

An instance of the attention now given to home matters in such "business" extension work, if one may so term it, is found in the work recently carried on in the Southern States, and noted in our news items on another page.

Two Articles. We wish to call attention to two articles in this number, that by Miss Vivian, with its introduction by Professor Cole, and the one so generously contributed by Miss Lathrop.

Miss Vivian's, although technical, is worth study by all who have to deal with a budget in any form. Professor Cole's note in regard to the interpretation of statistics should also be noted, for wrong conclusions based on false interpretation of statistics is one of the many ways in which figures may lie.

Miss Lathrop's paper suggests some new work for the Home Economics Association. Some college authorities who have opposed the introduction of Home Economics into the undergraduate course have approved of it as graduate work, since it is professional. If an important

function of the college is "to develop in the student the scholarly method of work," "to point out problems which need investigation" and to "give to the student the scholar's necessary working equipment;" if education is to be made "the interpretation of present civilization and conditions of life," then why should not many of our graduate students, under competent direction, undertake such work as Miss Lathop has suggested, and why should not this association urge such an opportunity upon our women's colleges?

COMMENT AND DISCUSSION

The *Journal of the American Medical Association* of November 20 under the heading Asepsis and the Dish Towel quotes from the JOURNAL OF HOME ECONOMICS and adds:

Among the low-priced restaurants and lunch rooms which are numbered by hundreds in our large cities, there is one (it is but a type—there are dozens like it) whose exterior of white brick and plate glass is as sparkling and bright as a newly frosted cake. Within, an expanse of white enamel, resplendent metal and spotless linen proclaim a devotion to cleanliness rivaled only by the surgical ward in a hospital. The waitresses are as neat and trim as uniformed nurses. In this stainless temple of alimentation one of the immaculate priestesses has been seen to pick up a glass just used by a departing guest, polish it with the dish towel at her belt, and calmly replace it on the table to be used by the next patron! One might instance even more horrifying infringements on prandial decency in more pretentious establishments; one might expatiate on the possible dangers of infection from such practices. The establishments do not lose custom thereby, probably because the public, while vaguely impressed with the beautiful ideal of asepsis or perfect cleanliness, has a pathetically inadequate idea of what it means. It is therefore encouraging to read the article under the heading "The Mischievous Wiping Cloth," in the November issue of the JOURNAL OF HOME ECONOMICS. . . .

Perhaps, if such ideas as these are becoming current, we may hope for the day when Bridget will invariably sterilize her dish cloth and scorn the dish towel for her aseptic dishes, while "neat-handed Phillis" will always complete her coiffure beyond all revision before coming to serve our food. At any rate, one may always hope.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Elementary Household Chemistry. By JOHN FERGUSON SNELL. New York: The Macmillan Company, 1914, pp. 307. \$1.25. By mail of the Journal, \$1.40.

The title of this book will appeal particularly to those who have attempted to teach elementary chemistry to either high school or college girls, who have little interest in or knowledge of "pure science," but who respond to a study of things with which they are closely concerned. The hope of making use of such a book will be further raised by an examination of its contents. While perhaps the author has attempted to do too much in a limited space, still he seems to have been for the most part fortunate in his choice of material. Approximately one-third of the volume is devoted to what may be called elementary chemistry. The remainder consists of more advanced work such as the study of fuels, foods, textiles, soaps, etc., together with the necessary chemistry. All of the subjects are intimately connected with the household. At times the organic chemistry becomes somewhat too involved, as in the discussion of the constitution of proteins, and in the use of structural formulae for the carbohydrates. It seems difficult to believe that such will have much meaning for elementary students.

Laboratory experiments are intermingled with the text. The reviewer believes that this is unfortunate, as in too many cases the results of the experiment may be too easily predicted. For example, if the paragraph on page 22 were read the performance of the experiment of page 23 would be nearly useless. The entire separation of text and experiment would partially overcome this difficulty.

The text is clearly, concisely and accurately written, and is amply illustrated. The book deserves general recognition and use for the purpose intended.

Source, Chemistry and Use of Food Products. By E. H. S. BAILEY. Philadelphia: P. Blakiston's Son and Company, 1914, pp. 517, figs. 75. \$1.60. By mail of the Journal, \$1.80.

The author has compiled a considerable amount of information regarding the origin, character and use of a large variety of food products, which he has attempted to present in such a manner as to give "a practical knowledge as to what constitutes a good food and where it is obtained." His purpose has been to prepare a book that would serve not only as a sort of compendium of information on food products for the general reader, but also as "a text for students of foods in our colleges and high schools." To the general reader the volume would probably prove interesting and instructive, but more careful editing would improve it decidedly for use as a textbook. There are evidences of inaccuracy or carelessness in preparation that are hardly to be expected in a book designed for the latter purpose.

Laboratory Experiments on Food Products. By E. H. S. BAILEY. Philadelphia: P. Blakiston's Son and Company, 1915, pp. vi + 44.

In this small manual in pamphlet form directions are given for performing 154 experiments "to enable the student to answer the question, of what substances are ordinary food materials composed and how

are they sometimes adulterated, or mislabeled." The experiments are chiefly qualitative and so simple in character that the author would seem to be warranted in his belief that they can be performed, under instruction, by students who have taken a course in general chemistry, though they are perhaps better adapted to those somewhat more advanced.

In general the lesson that the experiment teaches is easy, but in some cases the real significance of the test is not as clear as it might be made. To an instructor in elementary food chemistry who for some reason has been unable to prepare his own course the pamphlet will doubtless prove helpful, but should be supplemented by lectures or textbook lessons for details of the subject. It is designated by the author for use with the book noted above, *The Source, Chemistry and Use of Food Products*.

The Oriental Cook Book. By ARDAASHES H. KEOLEIAN (formerly of Constantinople). New York: Sully and Kleinteich, 1913, pp. 349. \$2. By mail of the Journal, \$2.10.

This collection of recipes is interesting not only because it gives directions for making Oriental dishes with materials available in the United States but also because it gives the reader glimpses into the gastronomy of the Near East. According to the preface, Oriental cooking is wholly based on "remarkable combinations of food-stuffs" and "on the theory that no one ingredient used should greatly outdo the others in strength, and that the result should be a perfect harmony." Moreover, cookery in the Orient appears to be regarded as an art rather than a science, and the author confesses to great difficulty in obtaining exact recipes "perhaps for no other reason than this singular one, namely, the non-existence in the Orient, or among any of the Oriental nations—except among the Armenians, and that in an inefficient form—of any regular literature upon the culinary art,

which might have served us as a guide among the widely differing recipes and ideas upon cookery that have existed from time immemorial, from the Balkans to Persia, and from Arabia and Egypt to the Caucasus." Under these conditions then, the wonder is not that the recipes given leave amounts of flavoring, etc., to the discretion of the cook, but that they are on the whole so easy to follow. They include a variety of sauces, soups, pilafs, modes of cooking fish, meat and vegetables, made dishes and preserves, many of them suggesting materials and combinations quite unknown in this country.

A descriptive list is given of some of these special Oriental ingredients which may be obtained in this country, among them pickled grapevine leaves, cummin, and hard Balkan cheese.

The regular order of service for the various courses at an Oriental dinner is also given as well as a score of typical menus. To a person interested in learning how the rest of the world lives, these are perhaps a trifle disappointing because they seem to represent elaborate banquets rather than everyday family meals, but they illustrate clearly the Oriental love for elaborate combinations of materials and flavors.

A Text Book of Domestic Science for High Schools. By MATILDA G. CAMPBELL. New York: The Macmillan Company, 1913, pp. 219. \$0.90, By mail of the Journal, \$1.

This book has a rather broad title since it deals with only one subject of domestic science, namely, food and nutrition. It is simply and comprehensively written to meet the needs and experience of the average high school student.

It does not presuppose much knowledge of either chemistry or physics on the part of the student, but plans for a series of simple experiments, illustrating each new principle.

In the main it is intensely practical, the one exception being the chapter on Table Service, in which elaborate and formal service is made the important feature rather

than the simple service which must be the rule in most homes unless undue labor and expenditure are involved. Knowledge of the essentials of relative value, of the possibilities of "gracious living," is what is most needed by the average high school girl.

The Care of the Baby. By J. P. CROZER GRIFFITH. Philadelphia and London: W. B. Saunders Company, 1915, pp. 463. \$1.50. By mail of the Journal, \$1.66.

This very suggestive book dealing with the care of children in health and in illness is much more comprehensive than the usual book dealing with these subjects, and for this reason will appeal strongly to mothers, and to many others who have to do with children.

The first chapters consider the care of the mother before the baby comes, the characteristics of the healthy baby and its needs. In subsequent chapters are discussed such subjects as the suitable clothing for the baby; methods of feeding; conditions for rest and exercise; the training of children. A considerable portion of the book is devoted to the sick baby. Symptoms of the various childrens' diseases are outlined, and directions for treatment are given in such cases as can be relieved without medical advice. An appendix contains many useful formulae for various household remedies.

Those chapters dealing with feeding are in the main helpful. However, the same criticism may be made here as in many other popularly written books dealing with infant feeding. One finds statements made which are not in accord with scientific teachings. For example, rules are given for modifying breast milk as follows: "To increase the fat, increase the meat in the diet. To decrease the fat, decrease the fat in the diet. To increase the proteins, decrease the exercise. To decrease the proteins, increase the exercise to the point of fatigue." (Page 131.) Recent investigations have shown that the variations in both fat and protein are dependent upon

individual characteristics, more especially inheritance (breed in the case of cows) rather than upon quantity or character of the food.

The author advocates the use of lime water in infant feeding "in order to neutralize the acidity, and more especially because it aids in the digestive process." Babies seem perfectly able to digest buttermilk, which is distinctly acid; and unless the lime water is added in very definite proportions it will not inhibit the curd formation. Most pediatricists are no longer using lime water in the milk formulae.

Although the directions for making the milk formulae are sufficiently simple, only a food specialist or a physician would know under what conditions these should be given. If there is a fundamental principle involved it is not apparent to the average mother.

The Mental Health of the School Child. By J. E. WALLACE WALLIN. New Haven: Yale University Press, 1914, pp. 464. \$2.

Dr. Wallin is one of the specialists in the field of mental health, and his earnest convictions and incisive proposals regarding the responsibility and special duties of the schools in relation to the mentally unusual children are entitled to serious and thoughtful consideration. This book is a collection of articles and addresses prepared by the author for use on different occasions in exposition of his knowledge and opinions concerning various closely related phases of the general field indicated by the title of the book.

It seems unfortunate that the valuable material in this volume could not have been conveniently arranged in a smaller book with a more systematic classification of material and a more concise and telling presentation.

However, the writer marshals a sufficient body of facts, opinions and arguments to provide strong support for his main contentions:

(a) That the maladjusted and mentally atypical pupils in the school should be recognized, understood and properly provided

for according to their individual conditions and needs.

(b) That, for this special task of identification, classification and technical guidance a new type of thoroughly trained educational expert is needed which the author would call a "psycho-clinician" or a "clinical psychologist."

(c) That an intelligent and really capable specialist in this educational field must have a new kind of professional training, including (in addition to other kinds of training) intensive study of abnormal psychology and one or two years of clinical and educational experience in the special field under the guidance of a recognized expert.

In the chapter on the "New Clinical Psychology" some valuable factors are given emphasis in relation to the comprehensive task of vocational direction. In another place just emphasis is given to the importance of having the school give recognition and opportunity to the super-normal—the gifted children. In chapter twelve an interesting and suggestive comparison is made

between the fields of eugenics and eugenics. Later, in discussing the difficulties and advantages of legal enactments safeguarding marriage, the vital principle is emphasized that "after all, the problem is not so much to get proper laws enacted as to secure the public sentiment that will demand their enforcement."

Perhaps the most important fundamental proposition of this entire work occurs in the introduction to the seventeenth chapter. This reads in part as follows:

"The preservation and promotion of the mental, physical, educational, social, moral and vocational efficiency of the individual is not only the most vital problem that confronts each human being, mature or immature, but it is also the problem par excellence of the family, state and school. The obligation for the reclamation, conservation and improvement of child life is being largely transferred to the state. The state has no agency which is able adequately to cope with the numerous problems involved except the public schools."

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NEWS FROM THE FIELD

Quebec Homemakers' Clubs.—The history of these organizations as compared with that of the other provinces in the Dominion is unique inasmuch as the women of Quebec, unassisted by the Government, began this work themselves. In all the other provinces of Canada, the provincial government has not only assisted in establishing Agricultural Societies for the benefit of the farmers, but has established separate organizations for the women of the farm homes, and has made special provision for giving them instruction along lines bearing directly upon the duties devolving upon them as homemakers.

In 1914, Macdonald College promised to aid the clubs in every way possible until such a time as the Government should come to their assistance. The Government has now agreed to aid in printing the handbooks.

A circulating library, consisting of Government bulletins, pamphlets and magazine clippings, was started by the School of Household Science in 1912, and has been available for clubs for use in preparing programs for their meetings.

Besides the circulating library just mentioned the School of Household Science sends out for use in the clubs four traveling libraries of thirty-five volumes each, twenty-four of which deal with subjects pertaining to household science, and the remainder are standard works of fiction, poetry, biography, etc. Lectures and demonstrations are given by the college demonstrator and by members of the Household Science staff.

At the second annual convention of the clubs held at Macdonald College, June 15-16, 1915, the report of Miss Campbell, demonstrator for the clubs, showed that since the last convention the clubs had increased from eight to thirty-three, and the membership from 252 to 633.

The object of the Quebec Homemakers' Clubs as set forth in the Constitution is as

follows: "The object of Homemakers' Clubs shall be to study the most scientific way of conducting home work in order to economize, strengthen and preserve the health of the family; to discuss the best expenditure of money in order to secure the highest conditions of home life; to provide better financial, social and intellectual advantages for farm boys and girls and yet keep them on the farm; to carry on any line of work which has for its object the welfare of home or community life."



The Garland School for Homemaking opened on Wednesday, the sixth of October, with seventy students.

The new members of the faculty this year are Miss Mabel Hill, Associate-Director; Miss Harriet Park, Secretary and Science teacher; Mrs. Margaret H. Abels, Economics; and Miss Alice Jordan, Children's Literature.

One of the most interesting of the new short courses is the one given by Mr. Thomas Whitney Surette, on music. The first two lectures are on music for children; the second two deal with music in relation to poetry, painting, and sculpture; the next group with classic and romantic music, and with the symphony and the opera. The course ends with special lectures on Bach and Beethoven.

Other short courses open to the general public are those in Applied Economics, Applied Sociology, The Study of Child Psychology, Household Management, Home Nursing, and Business Knowledge necessary for the Homemaker.

A new home-house opened this fall so that there are now three of these practice houses in which the students live through the year in family groups.

Detroit Home Economics Association.—The November meeting of the Detroit Home Economics Association was held in the Detroit Federation of Women's Clubs Building, Saturday, November 13, with the President, Miss Deda L. Emmons presiding.

Music was furnished by the Misses Fraser, with violin, cello, and piano. Mr. John H. Trybom, Director of Manual Training in the public schools, gave the Address of Welcome. Miss Isabel Bevier, of the University of Illinois, spoke upon Art in the Home, dividing her subject into the construction, the decoration, the industries, and the spirit of the house. Dr. Chas. E. Chadsey, Superintendent of Schools, followed, expressing the hope that within a short time one-fourth of a girl's school-life, from the third grade on, could be spent in the study of Home Economics in the broadest sense.

Preceding the meeting, a luncheon in honor of Miss Bevier was given at the College Club, about fifty guests attending. Guests were present from Ypsilanti, East Lansing, Saginaw and Wyandotte.



The Home Economics Association of Greater New York held a meeting on December 3 in commemoration of Mrs. Ellen H. Richards. Mrs. V. V. Farone, manager of the Fifth Avenue Restaurant and also of the Madison Square spoke on "Marketing for One Thousand."

The School of Household Science and Arts of Pratt Institute served a supper for the Association on December 1.



The Minnesota Home Economics Association held its second annual meeting in Minneapolis, October 29 and 30.

Representatives from the Housewives' League and the Woman's Club were present. A luncheon was served on October 29, at the East High School. Seventy-six members of the association were present.



The Home Economics Association of Washington, D. C., held the second meeting of the year November 9, in the form of an

evening trip through Corby's bread factory. The large attendance and keen interest of those present suggest that such meetings as this might be planned more often.



The Sectional Conference on Home Economics.—In response to the invitation of Dr. Claxton, the United States Commissioner of Education, fourteen visiting teachers from ten normal schools in different parts of the South, gathered at George Peabody College for Teachers in Nashville, Tennessee, for the first sectional conference of Home Economics teachers in state normal schools, on Tuesday and Wednesday, November 16, and 17. The conference was under the special direction of Miss Carrie Lyford, specialist in Home Economics of the United States Department of Education. The opening address on Tuesday morning, by Dr. Claxton, showed the great need of an adjustment of normal school courses to the needs of the young teacher, and especially to the teacher preparing herself for work in rural schools.

Tuesday morning was devoted chiefly to a discussion of the proper length of the Home Economics course in such schools, and of what it should include. One problem which nearly all normal school teachers of Home Economics meet is the great demand for a short course in the subject, especially by teachers preparing themselves for grade work, or for rural schools. They seem to expect a sort of "canned course" which will enable them in a few weeks to become thoroughly conversant with the subject.

Other familiar and definite problems considered were the grouping of general studies to be taken parallel to the Home Economics course; the differentiation of the course in the normal school from that in the state university; and how much practice teaching should be given; and where, whether in the demonstration or practice school, or in a rural school under conditions similar to those which a young teacher is likely to encounter.

Suggestions for a follow-up system were given with other ways of keeping in touch

with graduates in the field, and the possibilities of extension work from the normal school were discussed.

The topics which occupied most of Wednesday morning were the standardization of courses in Home Economics and normal school credit for high school work, with the expression of the general opinion that high school work should receive a fair amount of credit but that the normal schools should urge a more or less uniform course of study in the high schools of the different states in order to avoid duplication of work, and to allow the normal school to give more time to other phases of the work.

The final meeting of the conference was devoted to an informal discussion of courses in home management, and to the question of school credit for home work. Miss Virginia Moore, the State Agent for Tennessee in charge of Canning Club work gave a survey of the scope of the work in the state of Tennessee, and the possibilities of its development in rural communities.



The National Conference on Teacher-Training for Rural Schools.—At the same time and place of this Sectional Conference of Home Economics teachers there took place another conference, also called by the United States Commissioner of Education, The Second National Conference on Teacher-Training for Rural Schools. There were present at this conference over a hundred men and women from thirty states—as far East as Vermont, and as far West as Colorado and Texas. They were men and women interested not only in education but in rural life as well, and they came particularly to discuss The Better Preparation of Teachers for Rural Schools. This conference urged that the training of rural school teachers should include instruction in agriculture, home economics, manual training, rural sociology, and economy, hygiene, sanitation and playground work, and that the equipment for the work in agriculture should include a tract of farm land.

The members of the conference propose to introduce a nation-wide campaign for

full and equal opportunities for education for every boy and girl of America, and as a means to this end they ask that rural communities shall meet the following conditions:

1. A school term of not less than 160 days for each child.
2. A sufficient number of teachers adequately prepared for their work.
3. Consolidation of rural schools with an average area of about twelve miles for each school.
4. A teacher's home and a demonstration farm from five to fifty acres, a part of the school property.
5. An all-year session adapted to local conditions.
6. A county library with branch libraries at the centers of population with the schools as distributing centers.
7. Community organization with the school as the intellectual, industrial, educational and social center.
8. High school opportunities for every one.

The men and women present at the conference are leaders not only in their communities but in their states and the nation as well, therefore it is reasonably certain that the proceedings of the meetings will bear fruit before long.



Wanted: Facts for Domestic Art.—Mrs. Martha H. French, Director of Domestic Art in the State Normal College, Ypsilanti, Michigan, is collecting facts and suggestions regarding the material and equipment for teaching the domestic art subjects of sewing, dressmaking and millinery, with the idea of making the facts available for teachers in this field.

Those who have to do with domestic art work are invited to contribute from their experience; thus advancing the interests of all.



The National Society for the Promotion of Industrial Education will meet in Minneapolis, January 20-22, with headquarters at the Hotel Radisson.

At this conference reports will be made on the various phases of the Minneapolis survey of schools and industries made by this society during the past year. Suggestions will be given for improving conditions that this survey has revealed.

The American Home Economics Association will be represented by Miss Sarah Louise Arnold, Dean of Simmons College. At a sectional meeting Home Economics training in vocational and other schools will be discussed by Miss Abby Marlatt, Miss Josephine Berry, Miss Lilla Frick, Miss Carrie Wilkerson, Miss Anna M. Cooley, Mrs. Roy Fletcher, and Mrs. Harvey Hickock.

A cordial invitation to be present is extended to all teachers of Home Economics.

A Railway Demonstration Train. One of the ten cars comprising the Queen and Crescent Development Train, which made a trip through the South between August 15 and September 11, was given over to Domestic Science. There were exhibits of labor-saving devices for kitchen and dairy, and frequent demonstrations of cooking, preserving, and canning were given by Miss Minnie W. Hopper, a teacher in Greensboro College for Women, with several years' experience in school work in Home Economics, and Miss Cora Deddrige, a graduate of the Mississippi Industrial Institute and College, Columbus, who has taught Home Economics and lately has been connected with canning club work in the South. Besides this car, which was particularly helpful to women as housekeepers, there were other exhibits which interested them from the standpoint of money making. These included poultry, vegetables, and other farm products commonly raised by women, and demonstrations of modern methods of packing and shipping.

Teacher's College. Owing to changes in the management and use of the Speyer

School, the work at the Amy Schüssler apartment during the coming year will be different from that of last year. Beginning in February the Speyer School is to be used as an experimental high school for boys, the Board of Education of New York City and Teachers College cooperating. No one will live in the apartment this year but it will be in constant use for neighborhood work. Classes from neighboring institutions will be held there daily, afternoon and evening.

Brief Notes.—Miss Katherine Mills, Cornell 1914, during the past year held an extension position in Erie County, New York. There was a total attendance of over 3000 at the twenty schools held in different parts of the county. In June Miss Mills was married to Dr. Hamilton of Delphi, New York.

Miss Anna Barrows is to be at the Oregon Agricultural College, Corvallis, Oregon, to give lectures before the Farmers and Home Makers Conference January 3-8. February 1-4 she will fill a similar engagement at the Housekeepers Conference at Logan, Utah. The remainder of February she expects to spend in California and may be addressed in care of Miss Alice L. Thomas, Long Beach, California.

At the meeting of the Maryland State Federation of Women's Clubs held in Baltimore on November 18, 1915, Mrs. Abel, our former editor, who is now first vice-president of the State Federation, and State chairman of Home Economics, presided over the session on Home Economics. Mrs. Norton spoke briefly upon "The American Home Economics Association and the Smith-Lever Bill;" and Miss Katherine A. Pritchett, State Agent, Demonstration Work, U. S. Dept. of Agriculture, explained in a most effective address "How the Smith-Lever Bill Works in Maryland." We hope later to publish this address in the JOURNAL.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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COSTUME IN THE COOKERY LABORATORY

ISABEL ELY LORD

Director, School of Household Science and Arts, Pratt Institute

As the result of a recent discussion by the Editorial Board, it was decided that the facts concerning costume requirements for class work in cookery would be of interest to all teachers of Home Economics, and that an effort should be made to collect such facts. The questions were to be asked only of colleges, universities and normal schools, and accordingly in May, 1915, there was sent to the 217 such institutions appearing in the list of schools teaching Home Economics—published in the JOURNAL of June, 1911—the following questionnaire:

1. Do you require a costume?
2. If so, how are directions given for making? Attach copy if possible.
3. If not a uniform what requirements do you make as to material of waist and skirt?
4. State any requirements as to color of (1) waist, (2) skirt, (3) collar, (4) tie, (5) cap, (6) apron, (7) any other requirement.
5. Is there any other requirement for collar? If so, what?
6. Is there any other requirement for tie? If so, what?
7. Is an apron required? Of what type? Uniform?
8. Is a cap required? Uniform? Attach pattern if possible.
9. Is there any requirement as to shoes?
10. Is jewelry forbidden?
11. Are students allowed to wear this costume outside the cookery laboratory? If so, where?
12. If a uniform, is it planned for quick dressing?
13. What value do you think the uniform has?

14. Do you attempt to impress upon your students the value of wearing the uniform after graduation, in any professional position?

15. What objection have you to a uniform?

Answers were received from 110 of the 217, 9 replying that they had no work in Home Economics. Of the 101 giving data, 62 were colleges or universities, 39 normal schools (including any college or university having Teacher or Normal in its title).

Of the 101, 3 (1 college, 2 normal schools) have no requirements whatever as to dress in the cookery laboratory. At the other extreme are 18 (13 colleges, 5 normal schools) that require a uniform. Eighty (48 colleges, 32 normal schools) have some requirement as to costume, but not a complete uniform.

The two groups—colleges and universities, and normal schools—were kept separate in compiling the data, since in the majority of the latter the students are to become teachers of Home Economics, while in many of the former there is a large proportion of students taking the work for home use. There was, however, so little difference between the two groups that the figures are given together.

Dress. The data on the different parts of the dress for the group of 80 having some costume requirement are as follows:

Requirement for whole dress.....	14	Requirement for waist only	
White washable.....	10	White washable.....	21
Washable (no color given).....	4	Washable (1 dark blue).....	18
		Recommendation for waist only	
Recommending a whole dress.....	25	White washable.....	3
White washable.....	21	Washable.....	2
Washable.....	4	Requirement for skirt	
Requiring washable waist and recom-		Washable.....	2
mending washable skirt.....	4	Black cloth.....	2
		Blue serge.....	2

It should be noted that where cloth skirts are required, they are apparently part of the regular college or school uniform. It is hardly conceivable that otherwise there would be a requirement to wear wool in the kitchens.

Aprons. This is the one point in which there is uniformity as to requirement, for those who require anything.

Apron required.....	80	Waitress' apron.....	1
Uniform apron.....	44	Must cover skirt.....	4
Uniform apron with bib.....	37	Must have bib (even when not uniform)	26
Nurse's apron.....	5		

White is not always specified, but is probably always required. Straps over the shoulder are in the same case. The materials, so far as specified, range from lawn through Indian head to butcher's linen.

The tendency seems to be toward uniformity in aprons, as several signify their intention of requiring uniformity in the near future. The reason will be evident to those who have tried general directions for a "plain white apron covering the whole dress" and have seen the extraordinary results that such directions can produce. Frills and hamburger edging vary the plainness, and "all over" is taken to mean the front of the skirt only, and also to require a complete high necked and long sleeved dress. The requirement of uniformity in aprons is a simple one, and has none of the objections urged against the uniform, except that it does not permit the individuality of the student free play.

Cap. Here is the greatest diversity of the whole list:

Require cap.....	16	Do not require cap.....	57
which is uniform for.....	14	No answer, probably do not.....	6

Even of the 18 that require a uniform, only 5 require the cap, while 12 say they do not, and one not answering, should supposedly be added to this last group.

No special question was asked about the advisability of the cap, but there were a number of remarks about it. The reasons for it seem to be (1) the sanitary value of having the hair covered; (2) the professional look given to the costume; (3) the help in encouraging neat and trim hair dressing and the avoidance of extravagance in this respect. On the other hand, some consider the usual cap (which does not cover the whole head) ridiculous and farcical, two object that they are often unbecoming, and one thinks the hair is better dressed if there is no cap to cover it.

Accessories. The report on these does not seem very satisfactorily full, but is as follows:

Collar:		Prefer low.....	1
Require white.....	9	Prefer starched.....	1
Require turnover.....	4	Require high tailored.....	1

One low collar is described as Dutch, one as Buster Brown.

Tie:			
Require white.....	7	Require black Windsor.....	1
of these washable.....	2	Require washable if any.....	2

Several mention that neck may not be very low, but this would seem to come under the head of general suitability.

Shoes:		Walking shoes required.....	1
Require rubber heels.....	5	Black shoes required.....	1
Recommend rubber heels.....	4	Low heels suggested.....	1

It is interesting to note that besides the five here that require rubber heels, there are five more in the "full uniform" group with the same requirement, and one more recommends them. The advantages are great in the way of quiet in the building and of ease to students who must stand for much of their work. The difference as to noise can be appreciated only by those who have tried both ways. The expense to students is not great.

One entertaining answer to this question said that there was no requirement as to shoes, "except they must have shoes of some kind."

Jewelry. The seeming diversity here is probably less in practice than on paper, though some of us have seen rather appalling displays of fancy combs, fancy pins, long chains, rings and even bracelets in some classes in cookery.

Jewelry forbidden.....	31	Recommended or requested not to wear..	5
Rings forbidden.....	4	Same for rings.....	3
Bracelets forbidden.....	3	Disapproved.....	1
Excessive amounts forbidden.....	3	Not necessary to forbid.....	1
None forbidden.....	6	As little as possible.....	1
Discouraged.....	13		

Naturally the schools and colleges that require full uniform offer no place for jewelry, and 13 of the 18 definitely forbid it. In 2 more it is "discouraged," in 1, students are requested not to wear it, and in 1 they are expected to remove their rings.

At one school there is a definite exemption of the wedding ring from the exclusion, in deference to the superstition that with many forbids sit removal for any purpose. But even then students wearing it are asked to remove it during cookery work if they ever take it off for any purpose.

Other Requirements. A good many mentioned under this head the requirement that students have their own holders and hand-towels, but as these are part of the equipment rather than the dress, no account is taken of them here. A few mentioned a requirement of three-quarter sleeves or "short" sleeves, a few the requirement of white cuffs, and a few (where long sleeves are worn) that of over-sleeves.

Quick Dressing. This is an important point, as is shown by the number (23) who gave as an objection to the uniform the time required to dress. Eleven of the colleges and universities and all (5) of the normal schools requiring uniforms said that it was especially planned to permit rapid dressing. The time allowed for this was not asked, and so is not stated. At Pratt Institute ten minutes are allowed for changing into the uniform at the beginning of a cookery laboratory period, and the same time at the end for changing to ordinary dress. With the uniform as planned, and a locker and dressing room set aside for this purpose, the time is sufficient.

Wearing Costume Outside. There seems to be little uniformity of practice in this respect. Of the 18 requiring a uniform, 8 direct that it shall not be worn outside, although in one or two cases it is allowed at a class immediately following cookery. Six of this group allow the wearing of the dress outside, but not the apron (or cap). One allows it in chemical laboratory and sewing class and 1 says it is "not the custom," while 2 allow the whole costume anywhere.

Of the larger group, many did not answer the question. Twenty forbid it outside, 11 allow it anywhere, 14 forbid the apron (and cap) outside, 1 allows the costume in the dining room of the dormitory and 1 in the sewing class.

Directions for Making. Where any part of the costume is uniform, this is a very important point. Of the 18 requiring full uniform, 5 have printed directions, 4 typewritten directions. In one the uniform is a regular college one (with apron); in 1 where it is required only in the senior year, directions are given in the junior year; in 3 the instructor in domestic art gives the directions, in 1 there is a model on a dress form, and in 1 a commercial pattern is used. Samples of material are sent by at least 6. The fullest directions are those given by Pratt Institute, in a printed folder, with cut of the costume, sample of material and blue prints of collar and cuff patterns.

Of the larger group 4 have printed and 3 typewritten directions for the requirements. In 2 the aprons are made in the sewing class. Twelve altogether direct the purchase of commercial patterns. It may be of interest to some to know that the following patterns were given as being used for uniform aprons: Pictorial Review 4930; Ladies Home Journal 7434 (this is one of the universities requiring a uniform); Jones Dry Goods Company, Fort Collins, Colorado, pattern designed for Colorado State Agricultural College (20c. and postage); Butterick 3592

(one of the universities requiring a uniform), 5361 (by three, one requiring full uniform), and 6307. This last is the pattern of the apron used at Pratt Institute, and is required at four other schools.

Cap patterns are furnished by a number of the schools and offer noticeable variety. Some are of the circle type with a frill, covering practically all of the hair, but the majority use a cap covering the top of the head only (like the usual nurse's cap) and it is these that have called forth the strictures reported under the heading "Cap."

Full Uniforms. We may now describe a little more in detail the full uniforms required by the 18. They vary so widely that it is a little hard to give a definite picture, but here are the data:

Whole Dress:

Blue chambray.....	7	White waist.....	3
White.....	3	White aprons.....	18
Blue wash material.....	1	White collar.....	14
Striped blue and white gingham.....	1	White cuffs.....	5
Pink chambray.....	1	White tie.....	6
Gray chambray for seniors.....	1	Black tie.....	1
Blue and white ripplette.....	1	White cap.....	5
Navy blue wash blouse and blue serge skirt.....	1	Rubber heels on shoes.....	5

A number of the schools (which cannot be stated definitely because the question was not asked) require students to wear white while teaching practice classes, even when the class uniform is of different color. This is, for example, the case at Pratt Institute, where blue chambray is worn for class work.

The disadvantage of the white uniform, especially in the cheaper white materials, is that it is very hard to keep clean. Chambray is an excellent textile from this point of view. The colors given here are blue, pink and gray. The reason for the predominance of blue is apparently that it is a more attractive color than gray and does not fade as badly as pink.

A word as to the collar and tie. For many years some of the schools required the high starched linen collar, with a white lawn tie. This was the custom at Pratt Institute, and certainly in some other schools. But with the emancipation from the high collar for everyday wear, this has become very uncomfortable neckwear for most students. Some schools have met this by changing to a turnover starched collar with white or black tie, some use a white piqué turnover collar. At Pratt Institute



COOKERY COSTUME

Pratt Institute, School of Household Science and Arts
Butterick Pattern 6307 gives this Apron (used in four other schools)



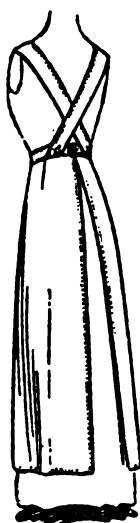
**Ladies Home Journal Pattern 7434 used,
with modifications, at Cornell University**



**Pictorial Review Pattern 4930
used at Simmons College**



3592

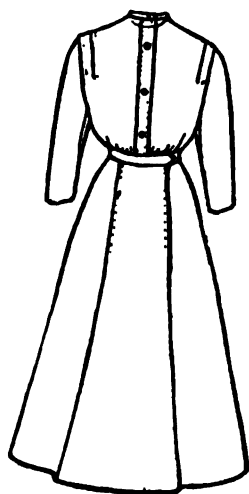


5361

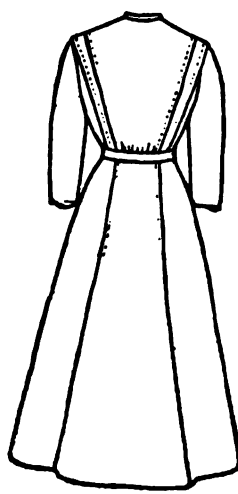


**Butterick Pattern 3592. (James Milliken University without bretelles)
Butterick Pattern 5361 (three schools)**





Front 2 yds. wide



Back

Milwaukee Downer College Dress and Apron

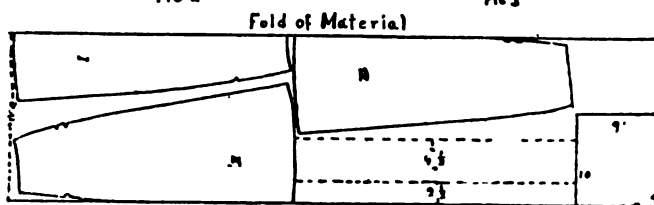
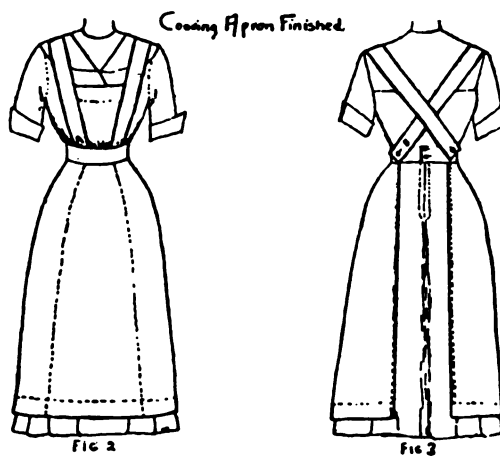
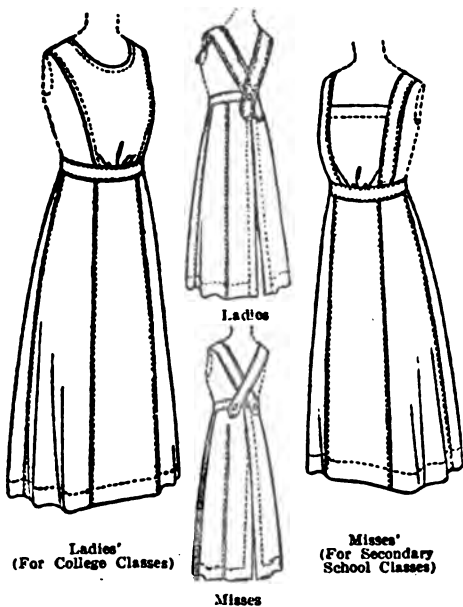


Fig 1

State College, New Mexico



Department of Home Economics, Colorado Agricultural College

this year a turnover collar was designed at the School, and blue print of pattern sent all incoming students, the collar to be made of white cotton poplin. The reason for adopting this rather than a starched turnover collar was that it was thought easier with this material to use a pin in place of the white tie. The tie adds to the difficulties of dressing, and on the whole the pin seems to us trimmer. The Pratt pin is a uniform one, a white enamel bar, two inches long, coming to a point at either end. These pins are on sale at the School, to ensure uniformity. The collars made by amateur dressmakers were so far from uniform and many so ill-fitting that students are now required to buy a starched turnover Trouville collar (with cape) when they need a new one.

Value of Uniform. Naturally all those schools that require the uniform consider it valuable and 17 of the other normal schools and 20 colleges also speak in its favor; one normal school and two colleges consider that it has no value whatever. In the reasons given for the value, it is rather difficult to make a classification, as the same general idea is expressed in many ways. "Suitability" is the general word and was used by 10 of the 55 stating a value, while "simplicity" (3) and "standard kitchen dress" (1) undoubtedly belong here, as well as the statement that "it overcomes improper dressing, such as woollen material and low necks." Perhaps here goes best the statement that it "develops pride in appropriate dress." The most important subhead is "sanitary" (12); this with its cognate subjects of neatness (23), cleanliness (9), trimness (2), and orderliness (3), as well as "protecting the dress" (3), altogether is mentioned by 62. "Attractiveness" is not neglected, however. It was doubtless in the minds of all who spoke of neatness and trimness, but was also specifically mentioned by 19, to whom should probably be added one who gave "freshness" as a desirable quality. "Economical" was given three times, the point apparently being the washableness of appropriate dress. Thirteen specify that the appearance of the class is better. That this is not purely a formal matter is shown by the statements that there is "better order in the laboratory—less confusion" and that the "psychological value of the uniform is considerable, in making for orderliness and workmanlike ways." Perhaps the one who gives "discipline" means to make this point. "Dignity" because of the professional factor given by the uniform, is mentioned by 6, while one uses the phrase "businesslike," one points out that there are no excuses for inappropriate dress possible and another

calls attention to the fact that grading according to appearance is more just where uniformity is required. One speaks of the good influence on the students' dress outside the cookery laboratory and another speaks of the good influence on the children (this of course in teaching). One states as an advantage that the uniform strengthens the democratic spirit.

Objections to the Uniform. It is impossible to resist the temptation to quote first the antithesis of the last statement under "Value"—the normal school that says: "It is institutional, artificial and undemocratic!" But the largest number of objections come under lack of time for changing dress (23), lack of space for dressing and lockers (12), and expense to students (18), of whom 4 specify laundry expense. Eight speak of the uniform as "impractical" which probably refers to the points above. One speaks of the waste of energy in changing, one of the hardship of getting dresses made alike, and one gives the curious reason that it is an "effort to see that they are kept in good condition."

None of these objections (except the first) is to the *principle* of the uniform, and it is such objections that have most weight. To take the less important points first, one says it "is difficult to get a uniform suitable to all," one that it is "too much like a prison dress." (One would think that depended on the uniform!) Three prefer "individuality," one stating that it gives a better chance to teach simplicity and fitness, and one wishes the students to look as they would at home, and thinks a woman has an inalienable right to wear a becoming tie.

The most serious objections, however, are those voiced by the first normal school head quoted, the college that objects that it "sets household science apart" and the fuller statement made by Miss Jenny Snow, of the Chicago Normal College, as follows: "I think the uniform has had more to do with the misunderstanding of the real purpose of our work than any other one thing. It has led people to think that this is a training for maids. No uniform is required in the bacteriological laboratories, chemical and physiological laboratories. Why should it be in the food laboratories?"

Wearing Uniform in Professional Work. This is of course quite a different question from that of the wearing of uniform by students. Many of the schools that object to the latter, encourage the students to wear it in teaching Home Economics or doing institutional work. Forty-one schools and colleges definitely try to impress on students

the desirability of wearing a uniform in professional work, while 3 recommend "plain white" for teachers, and 4 recommend "a wash dress, or a cotton dress." Only 5 answer "no" to the question, one emphatically adding "never." Two say "not directly."

General Conclusions. The report on a questionnaire is no proper place for an argument, and the reporter resists the strong temptation to "say the last word." But one fact seems to stand out clearly as a result of the data collected—the need of some standardizing of the uniform if it is to be worn, especially of the universally required apron.

This does not mean that we should have a single Home Economics uniform for the whole country. Even the training schools for nurses have not gone quite so far as that, and there would certainly be no advantage to our work in doing away with individual choice in color and even in style. But each school that has adopted a uniform, in whole or in part, has worked out details with care. A comparison of each point—for example, one piece dress or two piece? Type of collar and how fastened? Length of sleeve? Length of skirt from ground? Straps on apron? Pocket on dress or apron?—should result in the working out of two or three standard types for each article of the dress. The points to consider are (1) sanitary quality—protection and ease of keeping clean, (2) economic qualities—original cost and cost of cleaning, (3) time quality—quickness of dressing and undressing, (4) efficiency qualities—comfort and adaptability to the work, (5) the aesthetic quality—attractiveness. Every article of dress can be considered from all five of these points of view and there is no question but that except for the last there would be general agreement on no more than two or three "best ways." Then one of the large commercial pattern companies could be asked to carry all the patterns agreed on, and the work of giving directions would be greatly lessened. It would also be a help to the housewife who wishes to choose suitable dress or apron, to have such patterns available. If two or three styles of aprons for kitchen work were approved by the American Home Economics Association, it would be an easy matter to get some manufacturer of aprons to put them on the market. When we have all this experience, why not put it at the disposal of the woman in the home?

THE DEVELOPMENT OF HOME ECONOMICS IN SOCIAL WORK

WINIFRED S. GIBBS

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the Condition of the Poor*

Beginning in 1906 when lessons in simple diet and cooking were given to the women in their own homes, this work of Home Economics in the so-called Relief Organization has advanced steadily until at present it is a separate division and bears an intimate relation to the general scheme of the New York Association for Improving the Condition of the Poor. The aims of this work are to aid in preventing dependency, to assist in stamping out dependency by teaching the wise use of relief, to aid in preventing illness, and to relieve illness, if possible by dietary measures.

HELPING TO PREVENT DEPENDENCY

The Division of Home Economy aims to help the Relief Bureau to make definite plans for family rehabilitation, and then to teach the families how to carry out these plans. In self-supporting families, where the income is nearly or quite adequate, it is usually a matter of instruction alone. At best, these families are so perilously near the danger line, that, in order to accomplish much in the prevention of dependency, they must be taught to husband every resource. This usually means the teaching of system—its value and its application. In cases where the resources of the family are equal to the sum estimated as adequate for their support, the housekeeper is questioned as to her knowledge, and then, if necessary, she is taught how to keep accounts. The woman's first expense account is the peg upon which to hang further instruction.

The main items of the budget plan are: rent, food, fuel and light, clothing, insurance, carfare, and sundries. The rent is usually a matter of making the best of conditions, after a certain standard (two and one-half persons to a room) has been met. The food is estimated at twenty-seven cents per adult man per day; food needs of women and children are computed according to an accepted table of percentages, determined by age and sex. Data in regard to clothing needs is being gathered, but pending the time when these needs can be standardized, a rate of two dollars per individual per month is used. It will readily be seen that clothing needs can not be so definitely fixed as can food

needs. The two dollar rate, however, provides for comfortable, but very simple clothing. Long experience in the field convinces that the general morals of the family can be materially strengthened by education in neatness and suitability of clothing.

An attempt was made to get the families to confine their insurance expenditure to that of the bread winner, on the principle that it was better to spend the money for bread and milk than for children's insurance, thus putting off the evil day of the funeral. It was found, however, that the people cling so tenaciously to the certainty of a decent burial that no one had the heart to insist on their dropping the payments. Studies of needs for sundries are now being carried on, and a tentative rate of two dollars per month is allowed. Results are tending toward the final decision that four dollars is the "irreducible minimum." The great lack in these estimates is a provision for recreation and savings, although the latter item is all too seldom even a possibility. Furthermore, it does not seem possible for relief plans to take account of money for recreation, although no worker fails to realize its importance.

By way of illustrating the method of teaching where instruction alone is given, and where the aim is prevention of dependency, the following experience with a family designated as A is given. This consisted of a man, woman, girl of 4 years, and a baby of 2 years.

MONTHLY BUDGET OF FAMILY A

<i>Income</i>	<i>Estimated Expenditures</i>
\$52.00	Rent..... \$7.00
	Food..... 21.29
	Fuel and light..... 3.25
	Clothing..... 6.00
	Sundries..... 2.00
\$52.00	\$39.54

Home Economy work was begun in March, 1914. In spite of adequate income, the woman had asked for milk at the milk station, because she did not receive enough money from the man to cover household expenses. After investigation it was found that each brought accusation against the other. The man, who was said to illtreat the woman, in turn said that the woman was such a bad housekeeper that it was impossible to give her an adequate home keeping allowance, and that he had no incentive to live properly. Lessons were begun, and the woman was taught that a clean home and well cooked food would do much to

inspire her husband with a desire for better living. Progress was slow, but in August, 1914, great improvement on the part of the woman was noticed. The home was clean, the expense accounts were well kept, and the diet directions were followed. Thus far the man is not doing his part so well, but he has been given at least every chance.

HELPING TO ELIMINATE DEPENDENCY

Once the family has dropped below the "poverty line," the teaching follows a different plan, or rather plans, since a different problem presents itself in every case. Three illustrations may be cited here.

The following case illustrates instruction where income is insufficient and relief not advisable. In this family B, Home Economy work was begun in July, 1914.

MONTHLY BUDGET OF FAMILY B

<i>Income</i>	<i>Estimated Expenditures</i>
\$47.66	Rent.....\$11.00
	Food..... 27.05
	Fuel and light..... 3.25
	Clothing..... 6.00
	Insurance..... 3.25
	Sundries..... 2.00
\$47.66	\$52.55

The above budget is for an average month and shows what could have been done, except for the pressure of back debts. Because of these debts the income was insufficient and when the dietitian began the work the woman was so discouraged that she showed very little interest. Lessons were given in housekeeping, the selection of food, the diet needs in the family, and the preparation of food. This is a typical case of the necessity for teaching the wise use of a minimum dietary. In August, 1914, the undernourished condition of all the family was such as to cause anxiety, but the Relief Department thought best not to take up the matter. Diet lessons continued, and, although the death of one child brought a new sorrow, when Home Economy work was closed in September, 1914, general conditions were improved, and the woman had been made to feel that it was worth while trying to make the most of a very limited income.

Instruction during temporary loss of employment is illustrated by the following experience. In the family C, under normal conditions, the

income was sufficient, but the dietitian was asked to give lessons to the oldest girl while she was out of employment. These lessons included instruction in the selection and preparation of food, and in general house-keeping. The plan here was to teach the oldest daughter to become a good housekeeper, so that she might help her mother, a hard working janitress, and also better fit herself for a home of her own. Progress was satisfactory, although at the time of writing the work has not continued over a very long space of time.

The following experience illustrates a case of instruction in raising the family standard in treating intemperance. The family D, consisted of a man, a woman, three girls, aged 10, 8 and 5, and a boy of 5 years.

MONTHLY BUDGET OF FAMILY D

<i>Income</i>	<i>Estimated Expenditures</i>
\$52.00	Rent.....\$16.00
	Food..... 31.12
	Fuel and light..... 3.25
	Clothing..... 10.00
	Carfare..... 3.46
	Insurance..... 3.37
	Sundries..... 2.00
\$52.00	\$69.20

When lessons were begun the woman took very little interest, but as the work progressed she was decidedly impressed with the importance of having proper food for her husband, and also a clean house. Both the man and woman were finally brought to the point of coöperating; the visitor's efforts with the man were successful, and at present writing the woman continues to do her best in keeping up her end.

HELPING TO PREVENT ILLNESS

Almost every case that comes to the Division might fall under this head, directly or indirectly, since proper feeding has much to do with the prevention of illness.

Family dietaries are planned very carefully so that the maximum of nourishment may be obtained for the minimum of expenditure. These dietaries have been planned along scientific lines, but it has not been the practice of the Home Economy Division to make close laboratory studies of these diets. It is interesting to note however that the Teachers College Survey of these diets made in August, 1914, proves that the practice of the Association has been satisfactory from the dietary standpoint.

This study was made in connection with the standardizing of grocery orders. Four typical orders were submitted, each representing the possibilities of Association families. It was found that these diets, after some minor changes, were such as to furnish the families with food that satisfied the demands of physiological chemistry.

To illustrate teaching where it is aimed to prevent illness by teaching proper diet, the following case is noted of an Italian family designated E, consisting of man, woman, and seven children ranging in age from one to fourteen years.

AVERAGE MONTHLY BUDGET OF FAMILY E

<i>Income</i>	<i>Estimated Expenditures</i>
\$39.00	Rent..... \$9.00
	Food..... 40.13
	Fuel and light..... 3.25
	Clothing..... 14.00
	Sundries..... 2.00
\$39.00	\$68.38

The visitor requested the dietitian to revise the family dietary and the following interesting fact was noted. The deficit was \$28.18 and the woman's expenditure for food before instruction was \$26.78 when it should have been \$40.13. A careful study of the dietary showed that the food was well selected, and a special mathematical study was made which showed that the dietary fully met the needs of the family in protein, fat, ash, and caloric value. This seems to prove conclusively that the Association is justified in having different standards, so far as money is concerned, for the Italians. It does not mean that the Italian diets are all satisfactory, but in this particular case revision was not necessary. This case shows well one part of the diet work in doing preventive teaching. The mother was taught just how her dietary met the needs of the family, and it was impressed upon her that it would not be safe to decrease the food in any particular.

Another case to illustrate the value of diet in preventive work is that of a family designated F.

When Home Economy work was begun, the woman was receiving a weekly allowance of \$6.25, but it was found that she was saving money at the expense of her food and so her allowance was lowered. After adjusting her allowance and the expenditures, the budget was as follows:

The sewing teacher is publishing a pamphlet entitled *Clothing the Family*. This pamphlet is to be uniform with *Lessons in Proper Feeding*, by the author of this article, and is a small handbook. Another important piece of work being done is work in experimental cookery. This means the careful revising of ordinary cook book recipes so that expenses could be cut down to the very smallest amount compatible with palatableness. This is most important in the construction of attractive and nourishing minimum diet. If the work is done by a judicious person there is a saving from 15 to 50 per cent in the cost of each recipe. The division has already gained as a result of this work a collection of recipes absolutely invaluable and wholly unique.

As to the future, the possibilities for coördinating this Home Economy work with other forms of social work are very numerous, and it is hoped that in the near future many of these possibilities may be fulfilled.

THE EXPOSITION PLAQUE

At the meeting of the American Home Economics Association, held in connection with the National Education Association, at Oakland, California, a dinner was given by the California Association of Home Economics, at the California Exposition Building, to the guests of the American Home Economics Association.

At that dinner a bronze plaque was presented by the Assistant Chairman of Congresses of the Exposition, who remarked that this Association was one of nine hundred ninety-nine, held in San Francisco this year. The reply was made that we considered ourselves one in a thousand.

The plaque will be kept among the archives of the Association. Its form and inscription are shown in the frontispiece.

A NEW DEPARTURE IN THE TEACHING OF SEWING

EDNA IRENE AVERY

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The Home Economics Department of the State College for Teachers in Albany has inaugurated a new departure that is filled with interest and promise. It was found that under the general method of teaching elementary sewing the students were not sufficiently well grounded in the subject matter that they were to impart to the girls in their practice teaching classes. The criticism was also made that sewing is not a subject that will develop the mental processes and therefore is not on the same educational basis as the academic subjects in the college curriculum.

To overcome the former difficulty and to confute the latter criticism it was decided to approach Freshman Sewing in a different way. To fully appreciate this change one must remember that this institution has one problem only: that of training teachers.

The entering class was divided into two sections, those who had had no sewing and those who were familiar to a greater or lesser extent with the use of the needle either through domestic art courses in high schools or long use in the home. The subject matter covered in both sections is the same but the method of approach entirely different. In the former section, emphasis is placed upon technique (motor habits of sewing) and in the latter, upon subject matter (knowledge of sewing). It is the work of this latter section that has proved to be absorbing to both students and instructor.

An outline of the work is as follows: The ground covered during the year is divided into six unit groups.

Group I. The worker, tools, simple equipment.

Group II. Stitches, consisting of all the plain and a few simple embroidery stitches.

Group III. Principles of sewing, including repairing.

Group IV. Machines, their construction, use, care, repair, etc.

Group V. Drafting and commercial patterns.

Group VI. Construction of underwear.

The number of lessons allowed each group varies. More time is given to Group VI than to the others and least to Groups I, IV, and V. In all groups except the last, actual sewing is of a minimum amount

while the discussion and acquisition of knowledge concerning the topics is at the maximum. In other words, this group *thinks* sewing rather than *does* sewing and therein lies the value of this scheme. It will be seen that such a method naturally can only be adapted to those students who have had some experience in the technique of the art of sewing.

A brief description of some of the interesting things done will show the working out of the plan and perhaps be suggestive. In all groups the students are given topics for discussion, criticism and comparison and are sent to all available libraries and other sources for facts and information concerning these topics. It is really research work that they are required to do and the desire with which they respond exceeds the expectation of the advocates of this plan. Some of the topics discussed under Group I were: The worker (the domestic art student), her attitude toward her work, her method of working, economy of time, energy and nervous force, position of body conducive and nonconductive to health, ease and facility in working and the value of a standard in order to improve the quality of work. When the subject of tools was reached the class discussed their manufacture, specific uses of each tool, varieties and adaptabilities, cost, how and where to purchase and comparison with the object of discovering the most suitable for different classes of work. This readily led to a consideration of proper equipment for elementary and high school sewing.

In Group II the same method was employed with an occasional sewing test when in the judgment of the instructor it was deemed necessary. The stitches were discussed and criticised as to the various ways of beginning, joining, working and ending with the view of selecting those that seemed superior in workmanship, in facility in making and in speed. It may seem to one that there was a waste of time in this, but not so. The class recitation became so intense and animated that there is not a member of the section who does not possess accurate, scientific knowledge of good stitchery. Whenever sewing was done, it was given as a problem and the students were forced to work out their method of construction and application in the light of their previous class discussion. Hence, the sewing became a test of the student's ability to correctly apply her knowledge of sewing subject matter.

In Group IV, the study of machines, the students were required to learn the construction, physics and mechanism of a sewing machine.

One of the local machine agents kindly loaned twenty-five machines of different makes which, added to the regular college equipment, allowed a machine to each girl. The men's industrial department offered to assist in the explanation of mechanical principles. Instruction was given in the proper use, care and simple fixing which machines constantly need in order to run properly. After this, any student in the class is liable to be called upon to oil, take apart and adjust any machine in the laboratories which happens to be out of order or does not run smoothly. Many problems and exercises were given which required speed, accuracy in straight stitching and the use of the various attachments.

By the time the student has reached Group VI she finds herself in independent command of the use of patterns, all principles of hand and machine sewing and is expected to construct undergarments with little help and assistance. The sewing laboratory will now be more like a shop and although no garments will be made for the trade, each student will sew for some member of the class other than herself. Here technique will be of prime importance as well as speed, accuracy, responsibility, independence, and ability to work satisfactorily for others. There will also be opportunity for suggestion and original design.

It may be of interest to the reader to know the connection between the two sections. By keeping the unit groups parallel it is possible to shift students from one section to the other and this is done in the case of misfits. Those who lack the prerequisite for entering the advanced section must do one year's work in the lower section and take some of the unit groups the following year. The ones required will depend upon the ability and quality of work of the student while a member of the lower section.

The results hoped for are mastery of knowledge covering elementary sewing, capability, independence, speed, and accuracy, while the study and research work in the earlier groups provide sufficient mental activity on the part of the students to show that domestic art work *does* require the use of the mind in solving its problems, *does* develop force, character and power in addition to serving its very practical and essential end—the clothing of the human race.

THE NEED OF TRAINING TEACHERS FOR EXTENSION EDUCATION WORK¹

ALICE LOOMIS

Professor of Home Economics, University of Nebraska

Civilization is characterized by the division of labor and the development of specialists. If we are to make progress in extension work, we must follow the same path of advance and train the specialist. The two objections commonly urged against this are that the homemaker has such a wide variety of problems that the one who is to help her must be able to deal with many phases of home life, and that there is not enough money to employ a separate specialist for each group of problems.

Yet, a brief comparison of the home conditions of today and of previous times shows that the present homemaker in her dependence upon industries outside the home has herself become something of a specialist. Her need is for very definite help along lines requiring technical training rather than for the enthusiasm and good recipes which in the past have been considered a large asset. The other objection may be met by developing the extension work largely along the particular lines for which the workers are especially adapted. An illustration in point is the recent employment by a college of a woman whose architectural and other training has especially fitted her for the task of getting in shape material that others may use in working toward better housing conditions.

The extension worker must of necessity possess the three requisites so commonly demanded of her: first, the personality which will allay antagonism and arouse enthusiasm in the most difficult of situations; second, the keenness of mind which insures insight into the problems and a foresight that makes for effective work; and, thirdly, the natural adaptability which allows the extension worker to do everything from judging babies and crochet work to giving advice on subjects ranging from installation of water supplies to the embalming of bodies.

Given these qualifications those individuals should be chosen for extension training whose previous life as well as whose formal education, has fitted them for certain phases of the work. One of the successful leaders of boys' and girls' club work was largely prepared for her present success by the years she spent as county superintendent. This

¹ Presented at the Eighth Annual Meeting of the American Home Economics Association, Extension Education Section, Seattle, 1915.

woman knows thoroughly the rural conditions, the handling of boys' and girls' problems, the presenting of work to the ordinary rural school teacher, and thereby the means of coöperating with some of the various agencies which must be recognized in the successful management of boys' and girls' club work. When asked what preparation she would most have preferred for her work, she answered that while she would not give up one whit of her actual experience she would like to have had in addition to the regular college course, the special training in Home Economics and, equally important, a four years' course in agriculture. The best director of women's club study may be a woman whose life has given her not only an acquaintance with the household problems, but a knowledge of the workings of women's clubs. An example could be given of such a woman who has been unusually successful in representing the work of the university in her connection with over three hundred clubs, many of them rural and unfederated, but others strong federated clubs in close touch with the General Federation work. She is only one of a number of women with the housekeeper's point of view who also have had the opportunity to know how the training of specialists can be made of value to people outside the college. These women need not be graduates of technical courses but they must be intelligent women who are coöperators and organizers of the first order, knowing, on one hand, the needs of the community, and, on the other hand, the means whereby these needs may be met by specialists within the colleges, medical schools, and other organizations.

There is no doubt that an ideal situation exists in an institution whose graduates have had this other and larger experience. Illinois is one of the few states in which the course in Home Economics has been established long enough to have graduates in their own homes who can be called upon for part time in the service of the Extension Division. It is this state also which is fortunate in having among its graduates women available for extension service who previously have been well trained in the business world or who have been trained as nurses and social workers.

Within our college courses there are a number of women whose previous training and experience suggest their possible value in the extension field. For these people there should be a definite course in extension methods. This should be preceded by the courses in psychology, child study, history of education, and other courses considered prerequisite to such special method courses.

However well trained a worker may be in general, there is always the necessity for local color. College standards are fairly definite and no one now believes that there is a need for the training of teachers of college grade in the locality where they are to teach. In fact, the dangers of inbreeding are clearly recognized. Exactly the reverse is the case in extension work. The worker should not use six months or a year in becoming acquainted with the individual problems of her locality. This local color may be obtained by choosing a person who has grown up in the community or has in some other way gained a vital contact with its needs. It may also be gained by a short apprenticeship. In one case recently a successful worker from another section of the country was to begin work in a place necessitating entirely different methods. Throughout the summer she attended meetings conducted by experienced workers. Without doubt this method is of great value in introducing extension workers to their fields.

The most serious question in the training of extension workers seems to be the problem of the continuation of training for those already in the field. Their needs are two: first, the technical training which will enable them to keep abreast of the more recent advances in their work and to substitute for the "broad brush work," as Miss Ravenhill calls it, the careful and accurate thinking which a technical course demands; and, second, the need for the broad educational work that shall keep them in touch with what is being done in extension work in other states, thereby preventing needless repetition of errors and experimentation, and that shall also help them to see their extension work as a part of the general educational movement.

It is to be hoped that in the near future courses will be offered for extension workers which will meet these two great needs. A summer school with this purpose would be of value. The technical work might allow a choice between several lines, some at least of which should be of graduate grade, for workers prepared for such work. There should be no difficulty in offering graduate courses in education of value to extension workers since the doctor's degree is now granted in education. Besides these technical and collegiate educational courses there might be a course, possibly non-credit, but at least of no more than undergraduate grade, in extension methods. Since the work has developed so quickly and so differently in various sections of the country, this course might be made of the greatest service if it were offered in small units by various workers who have accomplished noteworthy results in special lines. With the inauguration

of such a summer course, with the careful choice of college students who are especially adapted for this type of work, with the growing number of Home Economics graduates who have gone out into their own homes and are willing to give a part of their time to the service, and with an organization of the extension service that will allow the employment of good coöperators whose life experience has trained them for certain fields—with development in all these lines, the problem of the training of extension workers should be at least partially solved.

THE ELLEN H. RICHARDS RESEARCH FUND

In January 1913 there was presented to the Massachusetts Institute of Technology a fund of \$15,000 in memory of Mrs. Ellen H. Richards, to be known by her name, and to be used for research work in Sanitary Chemistry, the subject which she successfully and inspiringly taught for so many years at the Institute. For the past two years this work has been under the general direction of Dr. John F. Norton, Assistant Professor of Chemistry of Sanitation. The February number of the *Journal of Infectious Diseases* contains an article by Professor Norton and the holder of the Ellen H. Richards Research Assistantship, Mr. P. H. Hsu, giving the results of the work done in 1914-1915. The problem involves the application of physico-chemical methods to the study of disinfection. Formic acid is used as the disinfecting agent because its properties and constants are either well known or can be easily determined. *B. typhosus* is the organism studied.

The first part of the article deals with experiments which show that the hydrogen ion is the real disinfecting agent, while the formate ion and the undissociated molecule have no direct action, but the presence of both influences the action of the hydrogen ion, the former having an accelerating and the latter a retarding influence. The apparent disinfecting power of formic acid solutions is due to the combined action of these three substances.

The second part deals with the effect of neutral salts. These are shown to act as accelerating agents on the disinfecting power of the hydrogen ions obtained from the acid. The article is preliminary to one to follow, which will deal with the mechanism of disinfection.

CALORIES IN THE EDIBLE PORTION OF A NUMBER OF FOODS

In calculating the food values of meals, it would often be a convenience to have a table giving calories per ounce instead of the more usual calories per pound. The following may therefore prove of interest. The values given are for the edible portion of uncooked foods and foods ready to eat without further preparation.

ENERGY VALUE OF SOME COMMON FOODS

	<i>calories per ounce</i>		<i>calories per ounce</i>
Apple butter	50.8	Corn meal (granular)	103.4
Apples, dried	84.4	Corn on cob	29.4
Apples, fresh	18.1	Cornstarch	104.7
Apricots, dried	80.6	Crackers, graham	122.2
Apricots, fresh	16.9	Crackers, white (soda)	120.3
Bananas	28.8	Cranberries	13.4
Barley	103.1	Cream	56.9
Beans, canned: kidney	30.0	Dates, dried	100.9
Lima	30.0	Eggs	45.0
navy	37.5	Farina (wheat)	105.3
Beans, dried: kidney	100.5	Figs, dried	92.2
Lima	101.5	Flour	104.0
navy	100.3	Leeks	9.4
Beets	13.4	Lentils, dried	101.3
Bread: graham	75.6	Lettuce	4.7
rye	73.8	Macaroni	104.0
white	75.9	Meat: beef, fresh, (side, medium	
whole wheat	71.2	fat)	79.0
Butter	225.3	beef, dried	52.5
Butterine	220.3	beef soup (homemade)	7.5
Cake, average	104.7	chicken (broilers)	31.6
ginger bread	104.7	chicken (fowl)	65.3
Cabbage	9.1	codfish, shredded (salt	
Cantaloupe	11.6	boneless)	30.6
Carrots	13.1	steak (fresh)	23.1
Celery	5.3	duck	80.6
Cheese: American:		goose	114.4
cream	121.9	lamb (side, without tallow) .	81.3
pale	128.4	mackerel, fresh	40.3
red	135.3	salt	84.0
Italian:		mutton (side, without	
common yellow	115.1	tallow)	97.5
Parmesan, little fat	94.1	pork, fresh (loins, medium	
Swiss	125.6	fat)	98.8
Corn, canned	28.4	salt (bellies)	200.0
Corn flakes	105.0	rabbit	28.6

	<i>calories per ounce</i>		<i>calories per ounce</i>
Meat: salmon, canned	57.2	Pickles, mixed	6.9
fresh	57.4	Potatoes, Irish	24.1
turkey	85.0	sweet	35.6
veal (side)	44.7	Prunes, dried	8.75
Milk	20.3	Raisins, dried	100.3
Milk, buttermilk	10.3	Rice	101.9
Molasses	80.6	Rolled oats ..	115.6
Noodles	104.0	Shredded wheat biscuits	106.3
Onions	14.1	Sauerkraut	7.8
Oranges	15.0	Spaghetti	103.8
Parsnips	18.7	Spinach	6.9
Peaches, fresh	11.9	Sugar	116.3
dried	80.5	Sirup (corn)	70.0
Pears, fresh	18.4	Tapioca	103.1
dried	102.2	Tomatoes, canned	6.6
Peas, canned	15.9	fresh	6.6
dried	103.4	Wheat breakfast food	108.8
Pickles, cucumber	4.4		

SANITARY DISHWASHING

BERTHA STEVENSON

Laboratory Kitchen, Boston

The usual method of washing glasses, cups and silver in the best restaurants is the hand method, which is about the same as that in use in private houses. But many restaurants, including those of a firm very well known in a number of our large cities, merely rinse the glasses and many soda fountains have a sort of squirter which dashes cold water into the glasses. In the Laboratory Kitchen, we found that we could not use very hot water by the hand method and therefore adopted the use of dishwashing machines for glasses, cups and silver. These machines are merely sets of iron tubs, fitted with steam pipes as well as water pipes. There is a tackle over head, and the glasses, cups and silver are plunged into the tubs in baskets. Live steam is injected into the rinsing tub, and when the glasses come out they are so hot that they cannot be touched for a few minutes.

The manufacturers of these iron sinks did not believe that we could

use them successfully for either glasses or silver; they said it had never been done before. They claimed that the breakage would be prohibitive in the case of glasses, and that the wear and tear on the silver would be too great. Such is not the case, however, in our experience. We find the method to be satisfactory and we believe it to be the cleanest method yet found.

As for the usual form of sterilizers, such as are used by the Walker Gordon Company for milk bottles, their size stands in the way of their general adoption in the crowded parts of cities. Soda fountains would have to move out when the sterilizers moved in. Then, too, the time required for each separate sterilization, and the labor required in handling the glasses and other pieces, make the sterilizer a difficult problem; but a sterilizer could be especially designed for this work with reference to economy of space and labor. It would have to be worked out to its last detail and lend itself to the direct stream of work, or it would merely look impressive and yet fall entirely short of its purpose. It would be a very easy thing for any soda fount or restaurant to install a sterilizer for show, but to live up to a real sterilizer of sufficient capacity to sterilize each and every piece of silver and glass, is quite another matter.

With regard to the importance of equipment in general, we reckon that the model equipment of every sort counts less than half in securing cleanliness. Clean premises, clean people, and clean methods count more than half. Also, it is evident that the purpose of any equipment, such as a sterilizer, could be defeated if the employees were not educated in clean methods.

There are three things which any restaurant can undertake and which would change the whole face of things as to cleanliness:

1. To make the premises clean by setting out all fixtures from the walls and removing dirt catchers, as far as possible, and by using plenty of soap and water.
2. To make the employees clean by medical inspection and supervision.
3. To make the methods of all employees clean by intelligent training and supervision.

Clean methods should be first, then new and better equipment.

FOR THE HOMEMAKER

LIVING EXPENSES OF WOMEN STUDENTS AT THE UNIVERSITY OF ILLINOIS

CORA E. GRAY

Many parents who are planning to send a daughter to college are interested to know something of her necessary expenses. There have been lately a number of studies made of the actual accounts of students, and some of them we shall publish as they are available. The following paper gives a summary of such expenses in a state university in the middle West.—*The Editor.*

During the second semester of last year the students in the Household Management class at the University of Illinois were required to keep their accounts for the three months ending May 15, 1915. The class was composed of juniors and seniors in the Household Science Department who lived in boarding houses, sorority houses, in the Young Women's Christian Association house, or, in one or two cases, in light housekeeping rooms. The University is located in a community of about twelve thousand, composed of the two towns of Champaign and Urbana.

The table below summarizes the expenses of fifty-three students for three months. Since the accounts were started after the beginning of the semester, they do not include tuition nor, in most cases, textbooks. The classification used was decided upon by class vote, and needs little explanation. "University activities" includes club dues, lectures, and any other expenses directly connected with academic interests. "University expenses" covers books bought during the semester, paper and other supplies, and railroad fare home over the Easter vacation, since the expense of reaching the institution is properly a part of the cost of a college education. In order to give as fair an idea as possible several figures have been given under each classification: the average, the minimum expenditure reported, and the maximum. It is of interest, however, to know whether the majority spent about the average amount, or whether the expenditures were fairly

evenly distributed between the maximum and minimum. The amounts in each class were arranged in order, beginning with the lowest and increasing toward the highest. In this series the fourteenth figure represents the largest amount spent by one-fourth the class. In a similar way, the highest expenditures for one-half and for three-fourths of the class were secured. From these figures it appears that, while there were great variations between the lowest and the highest amount, the expenditures of a large number of students were close to the average.

*Summary of Expenses of Junior and Senior Women at the University of Illinois
from February 15 to May 15, 1915*

	CLOTHING	LAUN- DRY AND CLEAN- ING	BOARD	RENT	UNIVER- SITY ACTIV- ITIES	UNIVER- SITY EX- PENSES	RECRE- ATION	MUSCUL- LANEOUS	TOTAL
Average.....	\$46.60	\$7.45	\$59.92	\$28.69	\$8.64	\$18.92	\$7.25	\$15.12	\$181.77
Maximum.....	116.70	25.00	95.00	44.00	26.60	42.10	25.00	91.50	426.00
Minimum.....	4.53	.94	25.00	9.00	.50	.70	.75	4.55	92.15
For items indi- cated $\frac{1}{4}$ of the students spent less than.....	29.30	4.20	50.95	24.00	3.50	10.10	3.09	8.30	150.00
$\frac{1}{2}$ of the students spent less than..	42.15	6.00	58.50	30.00	7.10	15.45	5.25	11.95	176.84
$\frac{3}{4}$ of the students spent less than..	62.98	11.00	65.00	32.00	13.42	23.13	9.96	19.51	209.43

The column showing the cost of clothing is probably the least valuable because of the short time during which the accounts were kept. Clothing expenditures are not distributed evenly over the year, nor even over several years. Consequently, while the figures are interesting as a record of what fifty-three students actually spent on clothes during these three months, they cannot be relied upon to show what clothing might be expected to cost during that period. In this connection it is interesting to note that a questionnaire sent out by the Dean of Women indicates \$173 as the average yearly cost of clothing. The cost of laundry was lowered by the fact that many students sent their clothes home to be washed, and counted only the parcel post rate as the cost of laundry. A few did their own washing. One of them reported an expenditure of \$0.94 as the cost of soap, starch, bluing and the rent of an electric iron. The amount spent for board presents wide variations, especially since so large a number paid about \$60. The minimum cost

of board, \$25 was that of a student who paid part of her bill in work, and who consequently did not represent the full food cost in her report. An expenditure of \$26.60, however, is reported by another student who, with several others, did light housekeeping, and who it might be added was a senior and an honor student. Rent, like food, presents a fairly uniform cost to a large number of students. The highest and lowest expenditures for rent belong to the same students as those for food. The expenditures for university interests, recreation, and miscellaneous items, as well as that for clothing, show the influence of the amount of money the student has to spend. The lowest total expenditure, \$92.15, was due to the fact that the student acted as commissary in her sorority and did not pay board, although a total expenditure of \$101 was reported by two girls who paid in money for everything.

Of all the expenditures, those for board, rent, and laundry seem most likely to furnish a basis upon which to estimate a year's expenses. The others are too much influenced by the short period to be of any great value. For a large number of students, board may be expected to cost \$20 a month, or \$4.50 a week; rent \$10 a month, usually with a roommate; laundry \$0.50 a week, but only on condition that the student does a part of it herself or sends it home. If any conclusion can be drawn from the total expenditures, the most usual amount, exclusive of tuition, for a junior or senior woman at the University of Illinois is \$60 a month, or a little over \$500 a year.

HONEY AND ITS USES IN THE HOME

The U. S. Department of Agriculture has recently published a bulletin¹ on honey and its uses, and some of the things it tells about are here brought to the housekeeper's attention.

In this country honey has hitherto not been in as common use as in Europe, especially in cookery. It is, however, a comparatively simple matter to substitute it in many recipes for common sugar or for molasses, and the resulting flavor is often both novel and agreeable.

¹Honey and its Uses in the Home. By Caroline L. Hunt and Helen W. Atwater, U. S. Dept. Agr., Farmers' Bul. 653. The Department of Agriculture will send this to anyone free upon request.

Honey is marketed in two forms, known respectively as comb honey and extracted honey. In the past there has been some prejudice against extracted honey—or honey removed from the comb—because it was believed that this was frequently adulterated. However prevalent this practice may have been in the past, recent legislation and the efforts of honey producers themselves have made it dangerous and unprofitable. There is now, it is believed, little adulterated extracted honey on the market. Comb honey is practically certain to be the pure product of the hive, because it can only be adulterated by processes which cost more than they save. When sold at retail there is now comparatively little difference in the cost of comb and extracted honey, but the latter can be purchased at wholesale very much more cheaply. The reason for this is that the producer of comb honey makes a product which is practically ready to be delivered to the consumer. Moreover, it costs the bee-keeper less to produce extracted honey while the wholesaler who purchases extracted honey must carry through several processes before he can sell it at retail. If the housewife is willing to do these herself, she can effect a considerable saving.

The fact that honey consists principally of sugar and water and is slightly acid suggests that it is a suitable substitute for molasses in cookery. As a matter of fact, it can be used in the place of molasses in all forms of breads, muffins, and cakes, and makes a more delicately flavored product. It contains less acid than molasses, however, and so requires less soda when it is substituted for molasses in recipes which do not include sour milk or other acid, and the cook must be careful about the amount of soda used. Many trials were made with different kinds of honey in the nutrition laboratory of the U. S. Department of Agriculture which showed that the allowance of soda to a cupful of honey very generally ranges between one-fourth and one-half of a level teaspoonful. Unless the cook is thoroughly familiar with her honey, she would do well to mix and bake a small sample of dough before she decides on the amount of soda to use.

One of the great advantages in the use of honey is that cakes made with it will keep much longer than those made with sugar. A honey cake made with butter, for instance, will keep its quality until the butter grows rancid, and one made without butter will keep fresh for months. For this reason honey is especially useful in recipes that call for no butter. Icing made with honey has the same advantage, and some icing made in the experimental laboratory of the Department of

Agriculture was found at the end of 10 months to be as soft and in as good condition as when it was first made. A little experience will enable any competent cook to substitute honey successfully for sugar in bread, cake, preserved fruits, sauces, and candies. It is safe to estimate that a cupful of honey will sweeten a dish about as much as a cupful of sugar, but since honey contains water in addition, there is need for less milk or other liquids. For practical purposes it is accurate enough to consider that for each cupful of honey a quarter of a cupful of liquid is added to the recipe. If these facts are kept in mind special honey recipes are unnecessary; yet it is convenient to have some that have been tested and adapted to household use.

The following are selected from a number of such recipes:

HONEY AND NUT BRAN MUFFINS

$\frac{1}{2}$ cup honey	2 cups bran
1 cup flour	1 tablespoon melted butter
From $\frac{1}{4}$ to $\frac{1}{2}$ teaspoon soda	1 $\frac{1}{2}$ cups milk
$\frac{1}{2}$ teaspoon salt	$\frac{1}{2}$ cup finely chopped English walnuts

Sift together the flour, soda, and salt, and mix them with the bran. Add the other ingredients and bake for 25 or 30 minutes in a hot oven in gem tins. This will make about 20 muffins.

SOFT HONEY CAKE

$\frac{1}{2}$ cup butter	1 teaspoon soda
1 cup honey	$\frac{1}{2}$ teaspoon cinnamon
1 egg	$\frac{1}{2}$ teaspoon ginger
$\frac{1}{2}$ cup sour milk	4 cups flour

Rub the butter and honey together; add the egg well beaten, the milk and the flour sifted with soda and spices. Bake in a shallow pan.

NUT HONEY CAKE

2 cups brown sugar	$\frac{1}{2}$ teaspoon ground nutmeg
2 cups honey	$\frac{1}{2}$ teaspoon allspice
6 egg yolks	1 cup chopped raisins
3 cups flour	$\frac{1}{2}$ ounce citron cut in small pieces
Speck of salt	$\frac{1}{2}$ ounce candied orange peel cut in small pieces
1 $\frac{1}{2}$ teaspoons soda	$\frac{1}{2}$ pound almonds coarsely chopped
3 teaspoons ground cinnamon	Whites of 3 eggs
$\frac{1}{2}$ teaspoon ground cloves	

Mix the sugar, honey, and the yolks of the eggs, and beat thoroughly. Sift together the flour, salt, spices, and soda. Combine all ingredients but the whites of the eggs. Beat the whites of the eggs till they are stiff and add them last. Pour the dough to the depth of about half an inch into well-buttered tins, and bake in a slow oven for one-half hour.

HARD HONEY CAKE

$\frac{1}{2}$ cup honey	$\frac{1}{2}$ teaspoon cloves
$\frac{1}{2}$ cup sugar	Speck white pepper
$2\frac{1}{2}$ cups flour	Speck salt
1 egg	$\frac{1}{2}$ teaspoon soda
$\frac{1}{2}$ teaspoon ginger	1 tablespoon water
1 teaspoon cinnamon	2 ounces blanched almonds cut into small pieces or chopped
$\frac{1}{2}$ teaspoon ground cardamom seed	

Sift together the flour and spices, dissolve the soda in the water, beat the egg and combine all the ingredients. Beat or knead the mixture thoroughly. Cook a small sample. If it does not rise sufficiently, add a little more soda and honey; if it falls, add a little more flour. Roll out the dough to the thickness of about three-fourths of an inch and bake in a hot oven. When the cake is done glaze it with a thick sirup of sugar and water and allow it to dry in a slow oven or in some other warm place. While it is still warm, cut it into long strips, or it may be left in one large cake, to be cut into thin slices when served. This cake will become very hard on cooling and will not be soft enough to eat for several weeks, but will keep in good condition for an indefinite length of time.

HONEY CHARLOTTE RUSSE

1 quart cream	$\frac{1}{2}$ cup delicately flavored honey
6 lady fingers	

Chill the honey by placing the dish containing it in a pan of ice water. Whip the cream and add it to the honey, mixing the two well. Line a dish with lady fingers and fill it with the honey and cream. Serve very cold.

CURRENTS

Bar-le-Duc currants, an article of commerce that sells for a relatively high price, in part no doubt because of the large amount of labor involved in preparing them, are often made with honey.

CANDIED CRANBERRIES

Candied cranberries make a delicious and inexpensive confection, much resembling candied cherries but having a distinct flavor of their own. This is a suggestion to housewives from the Home Economics experts of the U. S. Department of Agriculture, who have been developing new uses for the cranberry. They have developed a method which if followed closely gives a bright, firm, plump, semitransparent candied fruit which can be eaten as a sweetmeat or used to give a touch of color to frosted cakes, whipped cream, or custards, or which can be used like citron in cakes or puddings or chopped up and added to "tutti-frutti" ice creams.

The secret of candying cranberries lies in handling the fruit so that it will become saturated with sugar. This calls for slow cooking on the instalment plan and the use of a dish large enough to permit all the berries to float at the top of the sirup during cooking. The skins are so tough that they must be pierced before cooking to let the sirup into the pulp or interior. To do this, three little slits, each one-eighth inch long, should be made in each berry with the point of a penknife. Use selected large, firm cranberries. The directions for cooking are as follows:

For $1\frac{1}{2}$ cups of berries, make a thin sirup by boiling together until clear 2 cups of sugar and $2\frac{1}{2}$ cups of water. When the sirup is cool, add the berries and bring very slowly to the boiling point. If the berries are heated too quickly, the skins will burst before the sirup soaks into the pulp. As soon as the sirup boils, take the dish off the stove and let it stand over night. Next day, drain the sirup from the berries and boil it until it is reduced to about half its original volume. Put the berries into this medium-thick sirup and heat slowly; boil gently for 3 or 4 minutes, and then allow to stand for 2 hours or more. Then boil gently a third time for 5 minutes. A smaller dish probably will be needed for the third and last boiling. When thoroughly cold, or better still, on the following day, drain off the sirup and spread the berries out on a lightly buttered plate or a sheet of clean, waxed or lightly buttered paper until the surface of the berries dries.

The berries, if directions have been followed, will candy separately, and not into a sticky mass.

To make a delicious ice cream, add $\frac{1}{2}$ to $\frac{3}{4}$ of a cup of chopped berries to each quart of the cream mixture. They also can be combined with bits of candied orange or lemon peel, or other glacé fruits to make

"tutti-frutti" ice cream. The sirup left over after the berries are candied has a pleasant sweet-acid flavor and fine color and is excellent in pudding sauce or even, when diluted with water, for use on pancakes, and waffles.

GOOD HEALTH COMMERCIALLY CONSIDERED

The final report of the Commission on Industrial Relations, just issued, as reported in the *Journal of the American Medical Association*, states that each of the thirty-odd million wage earners in the United States loses an average of nine days a year through sickness, at an average cost of two dollars a day. The wage loss from this source is over five hundred million, while the added cost of medical care of at least \$180,000,000 increases the total sick bill of the wage earners of the United States to \$680,000,000 a year. From 30 to 40 per cent of cases requiring charitable relief are due to sickness, while sickness among wage earners is primarily the result of poverty, causing insufficient diet, bad housing, inadequate clothing and unfavorable surroundings in the home. According to the commission, the surroundings and place of work and the personal habits of the worker are important but secondary factors. This means that while there should be no diminution in our efforts to secure better conditions in the factory, the office and the workshop, the real solution of the public health problem lies in the improvement of the home.

"BABY WEEK"

The Children's Bureau of the U. S. Department of Labor wishes everyone to remember that 1916 is Baby Year. The facts about American babies, the needs of American babies, and America's responsibility to her babies will this year be known as never before, because the first week in March will be Baby Week throughout the country.

The Children's Bureau points out that more than four hundred communities representing every State in the Union are already laying their plans for Baby Week, in order that during those seven days the needs of the babies may be so presented that all the parents in those communities will learn a little better how to care for their babies, and all the citizens will realize that they have a special obligation to safeguard the conditions surrounding babies. It is confidently believed by those who are interested in this nation-wide Baby Week that the remainder of the year will be marked by a strengthening of all community activities for saving babies' lives and giving them a better chance to grow to a healthy maturity.

The Baby Week idea originated in Chicago not quite two years ago; then New York had a Baby Week, and Pittsburgh, and other cities. Such practical benefit has in each case resulted that the General Federation of Women's Clubs has undertaken to promote this nation-wide observance. State health officials and national organizations interested in public health and child welfare have taken up the plan and in various ways are giving it not only their sanction but their active coöperation. The extension divisions of the state universities have promised special assistance in interesting rural communities and helping them to observe Baby Week.

The Federal Children's Bureau believes that Baby Week will give more parents a chance to learn the accepted principles of infant care, and will awaken every American to his responsibility for the deaths of the three hundred thousand babies who, according to the census estimates, die every year before they are twelve months old. Therefore the Children's Bureau has prepared a special bulletin¹ of practical suggestions for Baby Week campaigns, adapted to the varying needs of communities of different types. Copies of this bulletin may be had free of charge from the Children's Bureau at Washington.

¹ *Baby-Week Campaigns—Suggestions for committees of various size.* (1915) Dept. of Labor, Children's Bureau, Miscellaneous Series 5, Bur. Pub. 15.

EDITORIALS

The Smoot Bill for Research in Home Economics (Senate Bill 280 of the Congress now in session). Those who are familiar with the Smith-Lever Act will remember that while Home Economics is mentioned as one of the subjects that is to receive attention from its funds there is no definite division of money, and no specification in regard to the amount that must be spent in work for the home as distinct from that devoted to agriculture. It is probable that in some states it will be difficult for Home Economics to obtain a fair share of the appropriations.

It is therefore with special interest that those in this movement look toward a bill dealing with appropriations for Experiment Stations to be devoted exclusively to experiments in Home Economics.

This bill was introduced by Senator Smoot of Utah, April 7, 1913. It was referred to the Senate Committee on Agriculture and Forestry and was still pending before that Committee at the dissolution of Congress. It is to be introduced again by Senator Smoot at the present session.

The bill proposes to supplement the Federal appropriations for experiment stations (Hatch and Adams Acts) by granting to each state \$10,000 per annum "to be applied only to paying the necessary expenses of conducting original or confirmatory researches or experiments bearing directly on Home Economics, including both domestic science and domestic art, and printing and disseminating the results of said researches or experiments, having due regard to the varying conditions and needs of the respective states and territories."

Under the proposed bill bulletins or reports of progress on the results of the work must be issued at least once in six months; these to be sent to newspapers and individuals under the franking privilege.

The remaining administrative details of the bill as to handling of funds, accounting, etc., correspond closely to those now prescribed under the Hatch and Adams Acts.

Effort should be made not only by organizations but by teachers of Home Economics, by housekeepers, by institution managers, and by social workers who are dealing directly with home problems, to bring to bear all legitimate influence for the passage of the bill.

Marketing by Telephone. Prof. T. N. Carver of Harvard in his review of "Lower Living Costs in Cities" by Clyde Lyndon King, in the July number of the *Municipal Review*, calls attention to "the enormous use which is made of the telephone in marketing." He says:

Any comparison between American and European cities which fails to take into account the fact that two-thirds of all the telephones in the world are in the United States and three-fourths of all of them in the United States and Canada is an incomplete comparison. It is easy to point out that much could be saved in the cost of food through the use of central municipal markets, but until the American housewives give up the telephone habit they are not going in large numbers to the central municipal market or any kind of a market that does not offer prompt or immediate delivery.

The author states "The American city still thinks corner-grocery-wise of its food supply" but it is not conclusively shown that there is any cheaper method of giving the American housewife the kind of service she demands than the corner grocery method. In fact there is much to be said in favor of the proposition that the cheapest method of rendering good service is to have a large number of small depots widely distributed to which food supplies may be sent in large lots, say by the truck-load, and from which they can be promptly distributed to the households in small or retail packages. It looks as though the problem of economic distribution of food products would have to be solved with the telephone as a factor rather than without it. If this be true, the corner grocery may serve as the depot from which the housewife may secure at a minimum cost prompt delivery of food in small packages. Instead therefore of relegating the corner grocery to a past century, a fuller knowledge of the situation may convince us that the centralized retail market belongs to a backward civilization antedating the wide use of the telephone, a state of affairs under which the housewife went to market with her basket and carried her purchases home. This may have been a means of saving money, but it was very wasteful of human energy. With the advance in civilization the tendency is more and more to save human energy even though we spend a little more in doing so. The energy which is saved may earn more than enough to pay for the extra money cost.

We have quoted in full because it is seldom that this side of the matter is so fully presented. We are told over and over again that one of the reasons for the high cost of living is "marketing by telephone." Often no distinction is made between the classes of goods that may be successfully bought in this way, and those that are difficult to obtain satisfactorily. Sugar, flour, canned goods, package goods, when one knows the brand, and many other standard articles may be bought as

well in this way as in any other. Meat, fresh fruits and vegetables are usually purchased more satisfactorily by personal inspection. It is easier, too, by going to market to take advantage of variations in market prices. Yet even here distinction must be made. The woman who deals with one clerk who will keep her informed of such variations, who knows the quality of food that she wishes and who is interested to serve her satisfactorily, may perhaps use the telephone without disadvantage.

One woman said that it cost her more to go to market herself for she constantly saw tempting materials that she wanted to buy though to her purse they represented luxuries. She carefully made out each week a list of her needs and ordered them by card or by telephone and confined her purchases to articles that she could afford.

However this may be, it seems foolish to make sweeping statements that for the very lack of differentiation carry no weight. Marketing by telephone is here and it has undoubtedly come to stay. Let us try to regulate it, not condemn it.

ANNOUNCEMENT

The American Home Economics Association will hold a meeting at Detroit, Michigan, on Friday, February 25, in connection with the meeting of the Department of Superintendence of the National Education Association.

In the morning there will be a joint session of Home Economics and Agriculture with addresses related to high and secondary school work. The afternoon session will include subjects of interest to college teachers and to officers of administration. One of the topics discussed will be that of "terminology."

Professor Marlatt of the University of Wisconsin; Professor Berry of the University of Minnesota; President Ednah Rich of Santa Barbara, Cal.; Professor Bevier of the University of Illinois; Professor Kinne of Teachers College, New York, and Professor Works of Cornell University, are expected to address the meetings.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Electric Cooking, Heating and Cleaning.

By MAUD LANCASTER. An American edition of an English book revised by Stephen L. Coles. New York: D. Van Nostrand Company, 1914, pp. 329. \$1.50. By mail of the JOURNAL \$1.64

Purporting to be a "Manual of electricity in the service of the home" this book lacks both organization of material and brevity of language to fulfill its purpose. In places it moves along in a decidedly chatty style and then becomes quite technical in tone. It is profusely illustrated, principally with English designs of electrical household appliances while few appliances now shown by American manufacturers are presented. The laundry equipment is most meager yet this is the place where the aid of electricity has been most welcomed in the household. The American line of household dishwashers, which lighten another tedious household task is not even touched.

In the chapter on electric heating of water, the cost and comparative heating efficiency of coal, gas and electricity are given. All costs for cooking and heating are based on the low English rate of 1d. or 2 cents per unit—1000 watts—while rates in the United States range from 3 to 20 cents per unit. A 10 cent rate is quite common in our cities. This makes all cost tables appear much lower than they would actually be here.

Perhaps the most valuable chapter of the book for our use is the listing of current rates of a large number of the cities and towns of the United States. This rate together with a knowledge of the gas rate for

that city would enable one to decide whether to equip a laboratory with gas or electricity, for there are many places where electricity would give the lower running cost.

Chemistry and its Relations to Daily Life.

By LOUIS KAHLBERG and EDWIN B. HART. New York: The Macmillan Company, 1914, pp. 393. \$1.25. By mail of the JOURNAL, \$1.39.

This volume is a textbook intended for students of agriculture and Home Economics in the secondary schools. About half of the book is devoted to the presentation of the principles of inorganic chemistry in a very elementary form. Applications to problems of daily life are given most successfully in close relation to the theoretical discussion, wherever the relation between theory and practice can be simply presented.

The treatment of more difficult practical matters to which the second half of the volume is devoted is less successful. Ten chapters devoted to inorganic chemistry and one devoted to organic chemistry do not serve as an adequate background for the discussion of such complex subjects as varnishes, textiles, rubber, soils, plant physiology, and plant and human nutrition. The treatment is necessarily empirical and encyclopedic rather than scientific. The volume is profusely illustrated with cuts which aim to emphasize practical applications—a home-made lime kiln, a field of sugar beets, a field of sugar cane, cooking utensils made of aluminum, thermite welding, and many others.

The Organic Flavoring Compounds. By C. COHN (*Die Organischen Geschmacksstoffe*). Berlin: Franz Siemenroth, 1914, pp. xi + 936.

This book is an extended treatise on the organic chemistry of the flavoring compounds. The first part of the volume is composed largely of a general classification. A discussion is given of the influence of chemical composition and constitution upon the degree and kind of taste. The physiology of taste is also considered somewhat at length. Detailed information is given regarding the more important synthetic sweet flavors, such as saccharin, dulcin, and glucin.

Roman Cooks. By CORNELIA G. HARCUM (*Dissertation, Johns Hopkins Univ.*, 1913. pp. 84). \$0.50. By mail of the JOURNAL, \$0.55.

Much interesting information is given regarding cooks and cooking during the early history of Rome. A bibliography is appended. Such publications are valuable in connection with the historical and cultural side of Home Economics.

Mary at the Farm and Book of Recipes Compiled During Her Visit Among the "Pennsylvania Germans." By EDITH M. THOMAS. Norristown, Pa.: John Hartenstine, 1915, pp. 440, pls. 20, figs. 30. Strawbridge and Clothier, Philadelphia, \$2.25. By mail of the JOURNAL, \$2.45.

It is not often that a book comes to hand which shows a clearer and more "common sensible" understanding of the philosophy of housekeeping than does this volume. Although set in a very slender frame of fiction, it contains much valuable historical information regarding the handicrafts and the culinary art practiced by the people of German stock in the southeastern part of Pennsylvania. Some of the illustrations represent typical people and scenery of that neighborhood, but many of them are reproductions of interesting household furnishings such as home-made rugs of various types, old Pennsylvania pottery, types of

lamps and lanterns, and other things. The recipes are typical of the dishes (many of them very "tasty"), beloved in that region and are neither too extravagant nor too "skimpy" for general use.

A Text-Book of Cooking. By CARLOTTA C. GREER. New York: Allyn and Bacon, 1915, pp. 431. \$1.25. By mail of the JOURNAL, \$1.37.

As one glances at the table of contents of this book, one is impressed with the fact that much thought and care has been expended in carefully outlining the work. For example, the division of foods is a somewhat unusual one, and the author has avoided the mistake sometimes made of giving the impression to immature students that protein builds tissue only and carbohydrates and fats only yield energy. The name given to the division on the mineral constituent of foods is unusual, too, and yet in accordance with our present knowledge of the functions of minerals.

The aims, as given in the preface, are "To lay the foundation for skill in cooking by directing the pupil to follow established recipes and to treat processes of cooking as experiments in a scientific study." This is a desirable attitude of mind to cultivate, even if there is some question as to whether skill in cooking is the most important aim for high school work. The preface further states that "An adaptation of the 'Meal Method' is used both for the purpose of reviewing processes of cooking and also for gaining skill and speed in the preparation of several foods at the same time." The plan is not always well carried out. There is some question, for example, whether the menu given on page 58, "Boiled rice with tomato or cheese sauce, chocolate cornstarch pudding," is really a meal; and whether these two dishes should be served together. Again it is not at all clear why the meal, in the midst of fats, should be corn soup, baked potato, and fruit tapioca.

The statement on page iv that "Subjects follow the logical order except where some other order is required because of the perish-

able or reasonable nature of foods" raises the question as to what is the logical order. For example, if, as the author says, "In the first portion of Part I special emphasis is placed upon the uses of foods in the body," why is it not logical to begin with "Body-building Foods," Division Four? Milk and eggs have the advantage of being familiar forms of food and just as seasonable and even cheaper in September and October than later in the year; while an examination of the fruits actually used shows that they are rhubarb, apples, bananas, apricots, and prunes, available, with the possible exception of rhubarb, in almost any season. Or, taking the author's own method, if she prefers to begin the actual preparation of food with fruit, why not relieve the "prosaic directions for dish-washing" by having a chart showing the large proportion of water in fresh fruits and vegetables and cook the dried fruits as given in Lesson 6, rather than introduce the more difficult processes of broiling tomatoes and baking squash. The uses of water would be better illustrated by the former method and the connection more direct than by the introduction of two unrelated cooking processes. Since there are many uses of water besides dish-washing, as the author shows so clearly in Division Six, why not teach them in this connection and so enable the student to regard water as something other than a cleansing agent?

Notwithstanding these criticisms, Part I contains much excellent material, and in the hands of a wise teacher, will be useful.

In Part II, the author has brought together a large amount of information on points that are of general interest to every home keeper and which ought to constitute a part of the training of every young person. The chapters on "The Lunch Box," "The Sick-room Tray," and "Dining-room Service" are excellent.

Doubtless, there is much more work than many high schools can use, but the book will be a valuable reference book in any home, and many mothers will welcome the suggestions on food requirement and diet for children.

Institutional Supplies. Baltimore, Md. Bureau of State and Municipal Research, 1913, report No. 5.

Part one is a general discussion of institutional buying followed by notes for the use of the purchasing officials and some standardized specifications. Two methods of buying are compared: first, buying by competitive bids submitted by dealers on specifications; second, buying through experts. The first is valuable because it stimulates competition, gives an open market, makes standardization necessary, and is notably valuable if the exception is made in case of special bargains. If the buying is done for a number of institutions an expert is able to obtain better prices and better quality of goods than is possible by competitive buying. The salary of such an expert, however, makes that method somewhat expensive.

In order to buy to the best advantage it is necessary to standardize all purchases; that is, to make a study of the quality of goods, the proper unit for economy, the amount consumed, and the special features of each article. The price will also be affected by the time of purchase, length of contract, numbers of and time of delivery. In planning specifications it is necessary to make a careful estimate of needs, and a careful designation of quality. The sample buying is often more satisfactory because it is the surest form of standardization. No contract should be made without allowing for the right to reject bids or to accept in part.

Even when goods are bought by contract arrangements should be made by which emergencies may be met and an opportunity given to avail the institution of certain advantageous bargains. Coöperative buying for many institutions through a staff of experts would be, perhaps, the most inexpensive and most satisfactory method of purchasing.

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- America's Gifts to the Old World: A Pageant or Masque for Home Economics Students.* By Helen W. Atwater and C. F. Langworthy. Baltimore: The American Home Economics Association, 1915, pp. vii + 20. \$0.50, 5 or more copies \$0.35 each.
- American Women in Civic Work.* By Helen Christine Bennett. New York: Dodd, Mead and Company, 1915, pp. 277. \$1.25. By mail of the Journal, \$1.36.
- Eugenics.* By Edgar Schuster. Baltimore: Warwick and York, 1912, pp. 264. \$0.40. By mail of the Journal, \$0.45.
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- Home-made Toys for Girls and Boys.* By A. Neely Hall. Boston: Lothrop, Lee and Shepard Company, 1915, pp. 218. \$1.25.
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- Constructive Social Measures: A Review of Two Years Work.* New York: N. Y. A. I. C. P., Department of Social Welfare, 1915, pp. 27.
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- My Life with a Pat of Butter.* By Lloyd Logan. Philadelphia: The Union Press, 1915, pp. 32. \$0.25. By mail of the Journal, \$0.27.
- The Ten Peace Songs.* By the Peace Song Committee. Chicago: Woman's Peace Party, 1915, pp. 39. \$0.25. By mail of the Journal, \$0.27.

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NEWS FROM THE FIELD

The Ohio Chapter of the Home Economics Association held its sixth annual meeting at Toledo, Ohio, in conjunction with the Northwestern Ohio Teachers' Association.

The morning was spent in visiting schools. The afternoon session was held at Scott High School. There were four speakers on the program—Prof. A. W. Trettien of Toledo University, spoke on *Some Neglected Factors in the Training of Girls*. He touched on various phases of their physical mental and moral development, especially emphasizing the fact that only in a strong, healthy body could we hope to have a sane mind.

Miss F. M. La Ganke, Western Reserve University, discussed the value of "contact points." Her plea was for a more liberal education, an ability on the instructor's part to correlate the work in her classes in household administration with the community housekeeping.

The complaints of mothers that their daughters do not learn to cook economically, that they waste time and use too many dishes were discussed by Miss M. Chapin in her paper on *How Can We Make Our Instruction in Home Economics More Effective?*

An illustrated talk on the Adulteration of Food was given by Dr. Wm. Reed of Toledo University. He showed milk and bake shop goods on sale "before and after" the inspection by the city authorities.

An inspection of the Household Administration rooms at Scott High School followed the meeting. The simplicity, the good taste, and the attention to detail in all the furnishings and equipment were especially noticeable. Tea was served in the refectory of the school by the Toledo Teachers' Association.

Texas Home Economics Association.—The third annual meeting of the Texas State Home Economics Association was held on November 26, 1915, in Corpus Christi, in connection with the Texas State Teachers' Association.

The meeting was presided over by Miss Emma E. Pirie, President, and was opened by her address to the Association.

The following program was then carried out: The Purpose and Work of the Home Economics Department of the Bureau of Education, Miss Carrie A. Lyford, Department Specialist in Home Economics; Science in the High School, Dr. E. P. Schoch, University of Texas, Austin; The Home Economics Teacher and the Public Health, Miss Grace R. Berry, State Normal School, San Marcos, Texas; Discussion of the Texas Home Economics Syllabus, led by Miss Mary E. Gearing, University of Texas, Austin.

Ellen H. Richards' Day at Ohio State University.—Ellen H. Richards' Memorial Day was observed by the Home Economics Club on December 3 with a program which included an address, *History of Home Economics at Ohio State University*, by Dean Vivian; a brief statement concerning Mrs. Richards' work by Miss Edna White, head of the Home Economics department; and *Personal Reminiscences concerning Mrs. Richards*, by Miss Anna R. Van Meter. There was an attendance of about 200, and a generous beginning was made toward a contribution to the memorial fund. The Home Economics Club served luncheon to 150 guests upon this occasion.

The Pageant, America's Gifts.—The authors of the pageant, America's Gifts to the Old World, who presented it to The American Home Economics Association have recommended to the Council the following plan for its presentation.

Home Economics schools and clubs who present the pageant are expected to pay to the American Home Economics Association 20 per cent of the paid admission; or, if admission is free, \$10 with the purchase of 15 or more copies, or \$15 with less than 15 copies.

Schools and clubs not especially concerned with Home Economics will be expected to pay a royalty of \$25 and 10 per cent of the gate receipts.

In the case of a small school or club a special arrangement may be made upon request.

In every case any money derived from the sale and use of the pageant goes to the Richards Memorial Fund for Home Economics.

For further information write to the American Home Economics Association, Station N, Baltimore, Md.

Two Phases of Extension Work.—The Home Economics Department at Ohio State University now has nine extension workers regularly in the field (and several others who go out occasionally), conducting courses in the county normals, and in the movable schools. The work of Farmers' Institute lecturers has recently been put under the direction of the department.

Miss Treva Kauffman has charge of the inauguration of a series of weekly lessons in several rural schools. Each lesson includes, together with other subject matter, the preparation of a dish which can be used for the children's luncheon, e.g., hot chocolate, cream and other soups, various potato, cereal, vegetable, fruit and egg dishes. A committee consisting of pupils and teacher attends each day to the preparing and serving of one of these hot dishes which the visiting teacher has demonstrated. This work has been taken up with great enthusi-

asm by the schools visited; needless to say, it has afforded the teacher excellent opportunities to teach sanitation, dietetics, higher standards of living, and various other things not explicitly laid down in the lessons as outlined.

Miss Jennie Tuttle, superintendent of the Columbus District Nurses' Association, has begun a series of extension lectures and demonstrations in home nursing and emergency work, visiting each of the various extension schools in turn.

Utah Extension Work.—Two Home Demonstrators are at work in the State. The projects in hand are home management and budgets for home use.

The keynote of the Housekeepers' Conferences for this year is health, how to obtain and conserve it. Speakers of note from outside the State will be present, at the conferences.

The girls' club work is beginning very auspiciously. The girls are showing much interest in the work outlined.

Extension Work, Iowa State College.—A correspondence course in Home Economics has been prepared for teachers of rural and grade schools. This is a course of 80 simple lessons so arranged that they can be easily applied in the schoolroom. No elaborate equipment will be necessary to carry out the work in the school, and only the practical phases of home work are included. The course begins with a few lessons on the principles of sanitation; then takes up briefly personal hygiene, and home management, and more fully, cooking and sewing. The subjects are treated so that a lesson prepared in the course is adaptable to the schoolroom with but little additional labor.

Enrollments may be made at any time. The lessons will be sent in the form of circulars containing an assignment of five lessons each. The fee is \$2.

Philadelphia School Luncheons.—The school lunch under the management of Miss Emma Smedley has been extended this

year, to three more high schools and twenty-five or more elementary schools. This action on the part of the school board is the result of investigation which found that 60 per cent of the school children started the day's work on wholly inadequate breakfasts, for example, one or more cups of coffee with a doughnut or bun, or a plate of cabbage with a slice of bread. Their luncheon pennies were spent for pretzels, pickles and candy.

For 15 cents the pupils in the high school can secure a substantial meal including soup, meat, dessert and cocoa or milk, and many find that 5 or 10 cents buys all they need. In the elementary schools the pupils may choose from a variety of penny dishes—hot creamed vegetables, soups, cocoa, milk, rolls, graham crackers, rice pudding, tapioca pudding, and stewed fruits. This is conducted on a paying basis.

In 1909 Miss Smedley, who had been a dietitian at Johns Hopkins Hospital, and a teacher of Domestic Science at Drexel Institute, took charge of the school lunch work in one of the high schools. The work has been extended until it includes ten high schools and annexes, and twenty-five elementary schools.

Lewis Institute, Chicago.—This year Lewis Institute has strengthened its four year curriculum. Courses in physiological chemistry, food analysis, geography of food, advanced work in dietetics, experimental cooking, technical cooking, and household management have been added for those who major in domestic science.

The domestic economy department at Lewis Institute plans to meet the needs of several groups of students. First, classes in cooking and sewing are offered to the high school girls in the Institute. Second, a two year college course, for those who are planning to teach in the grades, with instruction in both domestic science and domestic art. Third, a four year college course for those who are planning to teach. A student taking this course may major either in domestic science or domestic art; one-fourth of the

required credits should be elected from the liberal arts courses. Fourth, a one year course in institutional management open only to students twenty-five years of age, or older. The evening school offers many of the courses listed above, and in addition courses in practical dietetics for nurses.

In order to offer practical experience in management and cooking, the classes in home cooking, cafeteria, tea room, and institutional management prepare and serve meals daily, each student in turn taking charge as hostess, manager, cook, or waitress. These are self-supporting as the guests pay a reasonable charge for the meal.

The Carnegie Celebration at Pittsburgh.—An invitation was extended to the JOURNAL OF HOME ECONOMICS to send a delegate to the celebration at Pittsburgh, on November 23 and 24, in honor of Mr. Carnegie's eightieth birthday and the twenty-fifth anniversary of the Carnegie Institute of Technology. The editor of the JOURNAL was able to accept the invitation and is happy to express her thanks for the cordial hospitality of the Institute. This included not only a luncheon at the Twentieth Century Club, given to the women guests by Dean Breed; a tea at the Margaret Morrison School, at which Miss Lyon, head of the Household Economic Department and other members of the faculty acted as hostesses; a dinner given in the splendid architectural hall; a pageant and a French play in which students were actors; but most interesting of all, the opportunity to inspect the wonderfully equipped buildings of the Institute and to see the students at work.

The interest of the Home Economics visitors centered in the Margaret Morrison School with its fine buildings and admirable facilities for work.

The courses offered in this school include: Household Economics, Secretarial Studies, Costume Economics, Home Arts and Crafts, Social Work, and General Science.

Pratt Institute. School of Household Science and Arts.—The new members of

the faculty are Miss Ada Gause and Miss Helen Sauer, instructors in trade dressmaking, and Miss Clara E. Youngs, assistant in cookery. Miss Gause is a graduate of Drexel Institute who brought to her normal training excellent trade experience. Last year she was supervisor of domestic arts in the schools of Houston, Texas. A series of articles by her on Domestic Art in the Grades is now being published in the Industrial Arts Magazine. Miss Sauer is a graduate of Mechanics Institute, Rochester, with two years' experience in teaching dress-making.

Miss S. Ella Huntington, supervisor of millinery and teacher of trade classes, resigned December, 1915, after completing twenty-three years of service at Pratt. During all that time her fine personality, her trade experience and knowledge, her teaching ability and her deep interest in the work have been of inestimable value to generations of students. She is leaving the work to enter married life and carries with her the warmest good wishes of her colleagues.

The trade millinery of the winter term will be taught by Miss Ida Steele, who was trained by Miss Huntington and has since had excellent trade experience.

A series of demonstration lectures in cookery now forms a regular part of the Senior Normal Household Science schedule, each student being responsible for at least one demonstration during the fall or winter term.

Since these lectures are given mainly at settlements, where equipment is often limited and before audiences of varied nationality, there is unlimited opportunity for the development of initiative. Dishes prepared must be economical, wholesome and nutritious, and at the same time must meet the needs and tastes of the particular audience addressed, interesting the women to the point of trying out the recipe at home. The speaker must express herself in the simplest, most practical way, avoiding, or carefully explaining, technical terms.

The requests for special demonstrations that have been received from settlements

and Mothers Clubs this season show how eagerly this type of instruction is welcomed by those who most need it. One recent request for a laundry demonstration opens up a new line of possibilities.

Connecticut College for Women has opened most auspiciously with what is believed to be a record freshman class—freshman in more than one sense—for they are not only freshman but the first class to enter the new college. There are 137 of them, 50 resident in the two college houses, 50 living in New London and its environs and 37 special or part time students who come only for one or two courses in which they are particularly interested. This last class contains many older women.

The college has at present five buildings, four of them built of rock quarried on the grounds, the fifth a temporary refectory and faculty house. The dormitories were built through the generosity of Mr. Morton F. Plant who gave \$120,000 to build and furnish them. The administration and class room building which contains also the laboratories was built through the generosity of the people and corporation of New London, the former raising through personal subscription about \$137,000 and the latter giving \$50,000 from the city treasury. The endowment of the college, the magnificent sum of \$1,000,000, was given altogether by Mr. Morton F. Plant.

The college grounds are 340 acres in extent, running along the historic Yale-Harvard course on the Thames River and back from the river about three-quarters of a mile, including a beautiful bit of forest, Bolleswood, the deed to which traces it back to the possession of Uncas. The Shore Line Electric passes the college grounds and gives easy communication with Norwich and the down town part of New London.

Connecticut College proposes to offer the regular courses leading to the B.A. and B.S. degrees and in addition to give such vocational courses as it can add from time to time. At present work is offered in library work, in domestic science (dietetics, design,

etc.), ceramics, photography, secretarial work, and physical education. It must be remembered, however, that freshman work only is offered this year, as it is the intention of the college to add to this each year until in three or four years complete work in these subjects will be available.

Especial attention has been given to the dietetic laboratory, which is up-to-date in every respect. Cabinet gas ranges are used, twenty in number, and with the range in unit groups are cabinets and sinks. A practice dining room, pantry, and store room belong with the laboratory and adjoining is another large room which is intended in time for the study of the chemistry of foods.

A Vocational Congress for High School Girls.—More than a hundred girls from all parts of Montana, representing high schools and county rural schools, gathered at the State College at Bozeman November 18 to 20, to attend the third annual vocational Conference held by the College in coöperation with the State Federation of Women's Clubs.

Each delegate on her return to her own school is expected to give an account of what she has seen and heard at the Congress and so to extend and multiply its usefulness. In one high school the representative was chosen as the result of an essay contest on the subject, *Why I Wish to Attend the Vocational Congress*.

President Hamilton in his welcome to the guests spoke of the economic independence of woman as the basis of her freedom and of her need of knowledge of possible opportunities if she is to choose a vocation rightly.

Many able and successful men and women, experts in their own lines addressed the conference, discussing the various kinds of paying work, other than teaching, now open to women.

Some of the occupations whose claims were discussed were presented under the topics, *The Woman Agriculturist*, *Newspaper Work for Women*, *Women as Scien-*

tific Workers in State and Municipal Laboratories, *Home Economics Extension*, *Training for Christian Social Service*, *Women in the Office*, *Costume Designing*, *Why I am a Police Woman*, and *Money-making for the Home Girl*, while some of the more usual occupations such as nursing were treated from a new point of view; nor was *Home Making* as a profession omitted.

Mrs. Charlotte Perkins Gilman gave an address on *Women and Work*.

Three Eastern states, New Jersey, Tennessee and West Virginia, through club leaders, have expressed interest in this pioneer vocational congress have asked for full particulars about the Montana organization.

The School for Housekeepers at the University of Illinois.—The program of the school for Housekeepers held at the University of Illinois January 17 to 28 included not only food lectures and demonstrations, studied in form and color as applied to costume and problems in house furnishings, but also demonstrations of power machinery for household use, stereopticon lectures on landscape gardening and the flower garden, and on the plans and elevations for an Illinois country house; as well as many broad topics pertaining to the higher life of the home and the community.

The Fifteenth Meeting of the Central Association of Science and Mathematics Teachers was held on November 26 and 27 at the Carter Harrison Technical High School, Chicago. Two sessions were devoted to Home Economics, one of these in combination with the chemistry section. Some of the topics were: *The Specific Contributions of General Chemistry to Home Economics*, by Miss Nellie E. Goldthwaite; *At What Point in the Home Economics Course Should Chemistry Be Made an Organic Part?* by Miss Abby L. Marlatt; *Dietaries in the High School*, by Miss Minna Denton, and *Miss Edna White of Ohio State University*; *The Organization and Place of Marketing in the High School*, by Miss Alice M. Loomis, University of Nebraska.

Important Meetings.—Some of the meetings to be held in the near future that would be of special interest to Home Economics workers are the meetings of The Department of Superintendence of the N. E. A., to be held at Detroit, Michigan, February 21 to 26. Several allied associations are to meet at the same time. The American Home Economics Association will hold a council meeting and also a general conference.

The Thirteenth Annual Meeting of The Religious Education Association will be held in Chicago, at the Congress Hotel, February 28, 29, March 1, 2, 1916. Certain sessions will be devoted to the interests of the home. The Religious Education Association has from its beginning maintained a home department.

The American Chemical Society meets at Urbana, Illinois, with the University of Illinois, April 18-21. A program of papers on Chemistry and Home Economics is planned for one of the sessions.

The National Conference of Charities and Correction holds its annual meeting at Indianapolis, May 10 to 17.

The General Federation of Women's Clubs holds its biennial in New York City, May 23-June 1.

Dr. C. F. Langworthy was appointed as delegate from the American Home Economics Association to the Second Pan American Scientific Congress held in Washington, December 27, 1915 to January 8, 1916. Miss Van Rensselaer was designated as alternate delegate. Her name appeared on the program as one of the speakers.

Brief Notes.—The American Association for the Study and Prevention of Infant Mortality held its sixth annual meeting in Philadelphia, November 10 to 12, with sessions on Pediatrics, Obstetrics, Economic Aspects of Infant Welfare, Eugenics, Care of Homeless Babies, and Nursing and Social Work.

Instead of having the usual exhibits the committee arranged for the Association to visit the various baby-saving activities in Philadelphia.

Miss Gwendolyn Stewart, formerly instructor in physiological chemistry at the Santa Barbara Normal School of Manual Arts and Home Economics, is spending this year in the Physiology Department at Stanford University.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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Cottage near Brewster occupied by two young women teaching in adjacent districts



Double cottage at Eureka. One side occupied by principal and wife, the other by two women assistants

TEACHERS' COTTAGES, WASHINGTON (see page 109)

THE Journal of Home Economics

VOL. VIII

MARCH, 1916

No. 3

TEACHERS' COTTAGES AND RURAL HOME ECONOMICS¹

JOSEPHINE PRESTON

State Superintendent of Public Instruction for Washington

The greatest problem in education today is the rural school. The greatest need is for teachers with initiative, leadership, experience, high ideals, character, broad sympathy, and education. Where shall we get them? Some are in the rural school. But on the whole they have not been particularly attracted to the rural school. Why?

It is only within recent years that we have recognized the importance of the rural school problem. Since we have awakened to its importance we have readjusted our courses of study to meet the needs of the rural life, and have more and more sought the well trained and experienced teacher for our rural school boys and girls.

But we found that we could not keep them after we secured them. They taught often only one year. Why? In the early history of our rural schools the pioneer teachers boarded around. If the family who took the teacher for the week was able to give comfortable and sanitary housing accommodations, all well and good. But if the teacher had to be crowded into family quarters with poorly prepared meals the memory of that week stood out as one of the glaring evils of rural life. We outgrew this "boarding around" and it became the custom for the teacher to board with one family, if that were possible, throughout the term.

Sometimes the majority of the families in the neighborhood wanted to board the teacher. Some of our greatest complications arose from

¹ Presented at the Eighth Annual Meeting of the American Home Economics Association, Seattle, 1915.

the boarding question because often the teacher had to choose from a number of places offered her. If perchance she changed her boarding place after once having selected it, it was certain to bring dissatisfaction.

Finally we reached the period in the boarding question when we found the farmer's wife mildly protesting against the teacher boarder. Sometimes it was because the teacher who came out to board expected first class hotel service in the busy farm home. She must either change her point of view or make life miserable for that home.

However the real reason for this growing discontent was because the farmer's wife worked hard during the spring, summer and fall months and counted the winter months as her time for recreation. Then too the farmer himself felt a desire to be relieved of the teacher boarder. One farmer said to me one day when I was presenting to him his responsibility to take the teacher to board, "I do not want a teacher sitting around my fireside every evening. I want to be alone with my family once in a while." I thought of that well furnished many-roomed house which he and his family called home and I said at once: "That intrusion is very easily adjusted. Put a stove in one of those fine large well-furnished bedrooms of yours and give the average teacher plenty of wood and you will see very little of her except at meal times." He straightened up with much dignity and considerable spirit and said, "Mrs. Preston, any teacher that would be too good to sit with my family in the evening could simply pack her trunk and leave."

Sometimes the argument against the teacher boarder comes to us in a controversy like this: Mrs. A. says, "I boarded the teacher last year; Mrs. B. can take her turn at it this year." Mrs. B. insists that she kept the teacher year before last and that it is Mrs. C's turn. Poor timid Mrs. C. says, "I would gladly take the teacher but we have ten children and only two bedrooms and I do not see how we could accommodate her."

The teacher's cottage idea came to us as a last resort. After dealing with this boarding question from an administrative standpoint for a number of years I took the position that no teacher could give her best services unless she was happy and comfortable in her boarding place. I felt that the district had a responsibility in regard to the teacher's housing conditions. For ten years we have been building cottages for the rural teacher where the need seemed to justify this expenditure on the part of the district.

The state of Washington now has one hundred and twelve cottages. Each of thirty out of thirty-nine counties possesses from one to twelve of these dwellings, varying in cost from fifty dollars to thirty-two hundred dollars. Some of these residences are movable "shacks" that can be set on a logging train and moved when the camp moves; some are humble "lean-tos" built against the side of the school-house; in one district, on the Colville Indian Reservation, the teacher lives in a combination house and tent; in many cases the old school building has been worked over for a house for the teacher when a new school-house has been erected. But the majority of our cottages are the serviceable, well-built little houses of from two to six rooms, standing near the school building on the school grounds.

But what has this to do with Home Economics? Why is this a problem of a Home Economics Association? It is a "rural teachers' home movement," and this in itself would be a sufficient reason; a second reason lies in the fact that Home Economics may be taught better in rural schools by the use of the rural school cottage.

If there is a teacher's cottage it may be used as a laboratory for domestic science. These cottages are equipped with the usual kitchen utensils, cook stoves, sinks or suitable wash stands, and work tables. One of the teachers in our state who utilizes the district cottage for domestic science demonstration allows the pupils to prepare the noonday lunch of the school here. The farmers' families contribute milk and potatoes and other vegetables for this community plan of noonday hot lunches at the school. The idea of linking the teacher's cottage with domestic science is only passing from a remote possibility to a reality, but the rural schools in the future that give their most efficient training will feel that they have not been given their full opportunity until they have been given a teacher's cottage in which to teach the fundamental principles of Home Economics.

The new Washington Course of Study will set forth plans for the child to get 50 per cent of his credit in agriculture and Home Economics by doing work at home and sending in proper reports. This is the plan that must be used in the majority of our isolated districts. The teacher in these districts will give as much instruction as possible in her limited day of work, and then the pupils will put into practice at home the knowledge that they have received at school.

The decoration of the school cottage, the furnishing of the school cot-

tage, the making of the bed in the school cottage, the setting of the table in the school cottage; these are the opportunities which come to the teacher over and over again in the occasional visits from pupils and neighborhood farm women to demonstrate a model lesson in home making and housekeeping. Our kitchen plans and furnishings are intended to include those priceless modern conveniences that would reform most country homes and should give the country woman the conception of an easier method of doing her work.

The teachers' cottage assures a living place for the teacher; it attracts better teachers; it increases the tenure of office; it makes the teacher infinitely more efficient in school room and community, for every subject taught, including Home Economics, is better taught because this better type of a teacher has been brought to the rural school.

DOMESTIC ART IN THE HIGH SCHOOL COMMERCIAL COURSE

CLARA M. STEELE

The importance of domestic art work in the course of study for the girl who will become a homemaker after graduation has long been recognized. Its worth as part of the training of the girl who takes the general high school course has been conceded for some time. But the idea that part of the time spent by girls in the commercial course in our high schools should be given to domestic art is still a new one.

The fact that personal appearance plays so large a part in a girl's success has long been known, as has also the fact that it is with great difficulty that the girl on a small wage presents an appearance which will bear careful inspection. Since this is true why should not our public schools in their commercial courses provide the girl with opportunities to learn how best to solve her problems and so make her personal appearance a help, rather than a hindrance to her success in business.

The following course is planned to meet the needs of the business girl.

OUTLINE OF DOMESTIC ART FOR GIRLS IN THE COMMERCIAL COURSE¹

Time allowed. One year (36 weeks); one lesson (90 minutes) per week.

Previous work. Domestic Art work in seventh and eighth grades, including the elementary stitches and simple machine work. The making of very simple pieces of underwear, bags and the cooking uniforms.

PROBLEMS FOR COURSE

Main problem

What knowledge must I, a business girl, have of Domestic Arts to make my personal appearance a financial asset?

Contributing problems

- I. What must I know of personal hygiene?
- II. How much of my income shall I spend for clothes and how shall I apportion it?
- III. What must I know in order to choose my clothes wisely?
- IV. What must I know of sewing, garment-making and millinery in order to make my allowance suffice for my needs?
- V. What can I learn that will help me prolong the usefulness of my clothes?

I. What must I know of personal hygiene?

1. *Good posture.* (a) Sitting, (b) Standing, (c) Walking.
2. *Exercise.* (a) Need of, (b) Kinds of, (c) Opportunities for.
3. *Health habits.* (a) Breathing (proper breathing through nose, results of mouth breathing, deep full breathing, effects of tight clothing on); (b) Sleeping (need of, amount necessary, regular habits, importance of fresh air, importance of comfortable bed, importance of well fitting sleeping garments); (c) Eating (importance of regular meal times, uniform amounts, thorough mastication); (d) Drinking (importance of abundance of water, right method in drinking, use of hot and cold drinks).

¹ *References:* Laughlin: The Complete Dressmaker.

Banner, Bertha: Household Sewing with Home Dress Making.

Patton, Frances: Home and School Sewing.

II. How much of my income shall I spend for clothes and how shall I apportion it?

Study of the budget as a whole: How much shall I spend for board, clothes, savings, incidental expenses, carfares, health (doctor, dentist, toilet supplies), religion and charity, improvement, amusements and recreation.

Clothing budget: How much shall I spend for suits, undergarments, shoes, ties, gloves, etc.

III. What must I know in order to choose my clothes wisely?

1. *Hygiene of clothing.*
2. *How to judge materials, trimmings, etc.*
3. *Suitability of materials for garments, garment to wearer, garment to occasion, garment to purse.*
4. *Costume design:* Requirements of good dressing include: (a) unity in costume, (b) good lines, (c) pleasing silhouette, (d) subordination of costume to wearer, (e) enhancement of beauty of wearer, (f) appropriateness.

IV. What must I know of sewing, garment-making and millinery in order to make my allowance suffice for my needs?

1. *Stitches commonly used.*
2. *Embroidery, crocheting, tatting, etc., for use in neckwear, etc.*
3. *How to use a machine and its attachments.*
4. *How to choose, alter and use a commercial pattern.*
5. *How to make simple garments which are relatively expensive to buy ready made:* (a) Nice underwear; (b) Waists; (c) Neckwear—collars, cuffs, guimps, ties, etc.; (d) Simple dresses suitable for business.
6. *Construction of simple hat frames, their covering and trimming.*
7. *Renovating of materials—velvets, ribbons, silks and feathers.*

V. What can I learn that will help me prolong the usefulness of my clothes?

1. *Daily care:* (a) Clothes: general care, brushing, hanging, folding; (b) Shoes: brushing, airing, use of shoe trees; (c) Hats: brushing, use of paper bags for storage, substitutes for hat pins.

2. *Weekly care:* (a) Clothes: removal of stains, darning and mending, sponging and pressing, laundering (waists, collars and cuffs, gloves, stockings); (b) Shoes: repairing, shining.

3. *Seasonal care:* (a) Clothes (airing, removal of stains, darning and mending, laundering, folding, storing); (b) Shoes (cleaning, repairing, shining, storing); (c) Hats (brushing, packing, storing).

OUTLINE OF LESSONS

PROJECT	NO. OF LESSONS	PROCESSES	THOUGHT CONTENT	COST
Simple corset cover.	3	Review of work given in grades, adjusting pattern, altering pattern if necessary. Seams, sewing on lace and buttons, button holes. Making lingerie cord, crocheted or knotted. Other necessary stitches.	Choice of materials from standpoint of quality, suitability, laundering properties and cost. Choice of patterns: good lines, simplicity, ease in making and in laundering. Hygiene of clothing. Knit vs. muslin undergarments. Kinds of seams to be used. Why? When is it desirable to make underwear? Amount of money to be spent on underwear. Relative cost of home made and factory made underwear. Responsibility in buying. Consumer's League. Good taste in underwear.	
Shirtwaist.	8	Adjusting pattern, altering pattern. Cutting, fitting. Making plackets. Inserting sleeves. Sewing on hooks and eyes or fasteners. Finishing.	Study of designs suitable for business. Line and color harmony. Selection of pattern and material. Discussion of personal appearance and its relation to success in business. Study of budget. How much should this garment cost? How much strength is it economy for me to use in making my clothes? Need of exercise and good posture. Health habits, contributory to good appearance, a business asset. Care of waists. Laundering of white and colored materials. Folding, storing.	\$.50

OUTLINE OF LESSONS—Continued

PROJECT	NO. OF LESSONS	PROCESSES	THOUGHT CONTENT	COST
Neckwear.	5	Designing of pattern and ornamentation. Cutting. Fitting. Embroidery stitches. Crocheting. Tatting.	Discussion of importance of neckwear in effectiveness of costume. Economy in making. Importance of individual touches in making a costume. Value of handwork. Just prices for it. Consumer's League work and its importance. Good designs for various types of figures. Harmony of color and line in costume. Economical value of utilizing spare moments by making usable fancy work. Care and laundering of handwork.	\$.25
Darning and patching of articles brought from home.	3	Darning stockings. Darning cashmeres. Mending. Patching (hemmed, overhanded). Mending gloves.	Economy in darning and mending. When is it not economy? A "stitch in time." Economy in buying stockings of good quality and darning them often. Importance of good dyes. Effect of poorly fitted shoes on wear of stockings. Selection and care of shoes. Sense of self respect, the result of well mended garments. Unfavorable impressions which ripped gloves, run down heels, etc., give.	
Remodelling skirt (wool or silk.) ²	12	Brushing skirt, ripping, cleaning, pressing. Altering pattern. Adjusting to material. Cutting, making, pressing. Seams. Hemming on facing, putting on bands. Sewing on braid. Placket. Fastening.	Advisability of remaking old garments. Removal of stains. Textiles. Laundering of wool. Application to undergarments. Selection of good design in pattern. Appropriateness to wearer. Importance of a pleasing silhouette. Desirability of simple styles. Care of skirts, dresses and coats. Brushing. Hanging.	

² In this course, problems in remodelling were chosen as they afford opportunities for work in cleaning of materials, renovating and daily, weekly and seasonal care of clothes for which it might not have been possible to allow time otherwise.

OUTLINE OF LESSONS—Continued

PROJECT	NO. OF LESSONS	PROCESSES	THOUGHT CONTENT	COST
Remodelling hat.	5	Cleaning frame and trimmings. Steaming velvet. Renovating silks, ribbons, feathers. Making trimmings, bows and flowers. Simple trimming.	Proportion of income to be spent on hats. Study of budget. Relation of lines of hat to face and to figure. Importance of hat in silhouette. Suitability of hat to occasion. Economy in buying good materials and conservative styles. Frame should fit the head and be comfortable. Headache caused by ill fitting, heavy hats. Effect upon hair of heavy hat. Care of hat. Daily and seasonal.	

THE QUESTION BOX

QUESTION: What is being taught today about the digestibility of boiled milk—digestibility meaning length of time, ease and completeness of digestion of the boiled milk, particularly as a food for babies.

ANSWER: That boiled milk of another species is better borne than raw milk of another species has been shown by a number of investigators. (The literature has been reviewed in the Lane-Clayton Report to the Local Government Board of London, New Series number 63, 1912.) According to Brenneman (*Journal of American Medical Association*, vol. lx, 1913, p. 575), the curd formed during the digestion of boiled cow's milk is much finer than that formed during the digestion of raw cow's milk. This undoubtedly explains the reason for those results which show that boiled milk is better borne. However, milk heated to the boiling temperature is less valuable as a food owing to the fact that one of the constituents, cystin, is in part destroyed by heating. (Rettger, *American Journal of Physiology*, vol. vi, 1902, p. 450); (Schultz, *Zeit. Physiol. Chem.*, vol. xxv, 1898, 16); (McCollum and Davis, *Journ. Biol. Chem.*, vol. xxiii, 1915, p. 247).

THE HIGH SCHOOL LIBRARY AND HOME ECONOMICS

MARY J. BOOTH

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How can the high school library help the teacher of Home Economics? In answer let me first ask another question, How did the college or university library help you when you, as a student of Home Economics, were receiving your training? If your student life was passed in a school where the general library had a representative collection of books and made them accessible by adequate cataloging and supplemented them with pamphlets, clippings, pictures, lantern slides and educational exhibits, you know perhaps better than I can tell you how a high school library with similar equipment might help you.

But I can imagine your discouragement when you discovered, on beginning your teaching, that practically nothing in the way of books or supplementary material was provided for your pupils by the high school library and that your private library was too small for the demands made upon it. Perhaps there was no high school library and very little material on Home Economics in the public library. Then you decided to remedy this condition and set about collecting material for the use of your classes. This constantly increasing mass of material was kept in your class room as the most convenient place. As your work increased you did not have time to collect many of the recent publications even if there had been room for more material.

The plan of having a general high school library has been proposed, with the intention of gathering together all the scattered books and pamphlets belonging to the school and placing them in one room in charge of a librarian. So we come back to the question asked at the beginning. How can the high school library help you, a teacher of Home Economics?

With all the material centralized, a teacher wishing to hunt up a topic in textiles, such as silk or cotton, could find in the library the books and pamphlets on the subject, or a record of their withdrawal. If withdrawn, they will be recalled for her use. Should she want the books for use in her class room they may be taken there; should she want them on reserve shelves in the library they may be placed there. If put on the reserve shelves they are available at any time during the school day to members of the class and may usually be withdrawn for use over night. With only class room libraries this system of reserve books can not be

undertaken and consequently the students have access to the books only when the class room is unoccupied. Often the teacher is obliged to leave soon after dismissal of school, and the room is inaccessible to pupils at perhaps the only time in the day when it might be used by them.

When the class has finished the topic in textiles the books are returned to the general collection where they are ready for the teacher of commercial geography or for the teacher of English for theme work. If a course is being given in costume design, there will probably be some historical consideration of the subject and this calls for books from the history department as well as from the Latin and Greek departments. If the course includes the costumes of different foreign countries of to-day the books in the geography department would be of use. In the study of household sanitation, books from the department of physiology and hygiene would be needed for supplementary use; in the study of household bacteriology books from the biological department; in the study of the sewing machine books from the department of physics; in the study of household chemistry books from the department of chemistry.

If class room libraries alone had been used this free interchange of books would have been almost impossible. Without the general catalog no one would know what books were owned by the different departments. With a general library well cataloged the books in different departments, treating of the same or related subjects, are brought together in the catalog and made available for all the teachers, thus giving each book the maximum amount of use.

A central library can be of great help in the collection of material obtainable free or at small cost. Especially in Home Economics there is a wealth of such material found in government publications, state publications, and advertising pamphlets. Much of this is of value, but the editions are limited and only those obtaining copies early can be certain of securing them. A librarian alert to increase the collection of material that she knows will be of use, will be on the watch for notices of valuable pamphlets. Of especial value for this purpose are the monthly catalog of United States public documents and the monthly catalog of state publications, both obtainable from the Superintendent of Documents, Washington. The monthly list of publications of the Department of Agriculture is also useful as it is issued before the monthly catalog of public documents, thus making the publications available earlier. The address list for illustrative materials and laboratory supplies for in-

struction in household arts issued by Teachers College, Columbia University, is of value.

Letters written on the library stationery usually bring the pamphlet requested, when the request of an individual would not always get a favorable response. Sometimes it will be possible to obtain six or more copies of a pamphlet needed for class use. The most valuable of the pamphlets would be pasted in pamphlet covers in order to stand hard usage, while others of less value would be filed with the clippings.

The kind of material available is illustrated by such pamphlets as *Education for the Home*, by Benjamin R. Andrews, U. S. Bureau of Education Bulletin, 1914, numbers, 36, 37, 38, 39; *Mechanics of the Sewing Machine*, Singer Sewing Machine Company, Singer Building, New York; *Spices*, McCormick and Company, Baltimore, Md.; *Substitutes for Meat*, and *How to Use Left Overs*, recent pamphlets published by the New York City Food Supply Committee. Sets of colored postcards, on tea and coffee, 25 in a set, are sent free by Hills Brothers, San Francisco, for example.

The high school library should also have a clipping collection, a picture collection, and educational exhibits. If a teacher of Home Economics were gathering information on the subject cocoa or chocolate, besides the books and pamphlets entered in the card catalog, there would be available pictures of how cocoa pods are gathered, and perhaps an exhibit showing the pods in different stages and the steps in the manufacture of cocoa and chocolate. For some subjects, as interior decoration, there would be clippings supplementing available books and pamphlets.

In order to have the library of the high school of the greatest usefulness, the librarian should be a person of good education and with library training. Some unsuccessful teacher who "just loves to read" will prove unsatisfactory as may also a good teacher who, interested in library work, wishes to undertake the care of the library as part of her school work. Some of the high schools in the East are demanding that the librarian be a college graduate and a graduate of a library school. With these requirements of course goes a salary equal to the other high school teachers who are heads of departments. The librarian is more than a clerk, more than some one to keep order in the study room.

Besides helping the teacher in Home Economics, the library must be of use to the high school student. Books belonging to all departments are made available for him by the catalog just as they are for the teacher.

But more than this, the student must be taught to use the library intelligently. Just how to get the time for this is a problem that has been worked out in different ways in different schools. Sometimes the English and history departments give half or whole recitation periods to the librarian for this instruction, and why should not the Home Economics department do this also? Surely the ability to use a library in these days when libraries are so general should be a part of the common education. The librarian, not the teacher, should give the instruction in the use of the library. In the early lessons the rules of the library and the location of books should be explained, the use of the catalog, including author, title, subject cards, and call number, and how to find the books on the shelves. Every entering class needs at least this instruction given with problems to work out embodying the points brought out in the lessons. Later on in the high school course the use of common reference books and of magazine indexes should be explained and problems given. Learning how to use the magazine indexes is particularly important as so many valuable and timely articles are printed in the magazines. In Home Economics, especially, there is much usable material in the magazines. By means of this instruction, the students are able with little waste of time to look up material for topics not only in the high school library but also in the public library, which must be used to supplement the school library.

One factor necessary for the full usefulness of the high school library lies in the teacher of Home Economics herself. If she is not interested and does not make use of the materials provided, and shows in every way she can that she does not wish to coöperate, she becomes one of the "stone walls" that librarians sometimes run up against; but if she is progressive, and realizes that the high school library is trying to serve her interests, she will cordially coöperate with the librarian, make use of the materials provided and suggest other ways of helpfulness. With a teacher of this kind and with a librarian well trained and anxious to help, the usefulness of the high school library is assured.

In closing I wish to quote the words used by Mr. Purd B. Wright, librarian of the Kansas City, Missouri, public library, in ending his address before the Library Department of the National Education Association in 1914. "In conclusion let it be borne in mind constantly by both librarians and teachers that their work is mutual and only by their getting this view point of each other, and understanding the end sought by each, can satisfactory results be obtained."

THE MINERAL NUTRIENTS IN PRACTICAL HUMAN DIETETICS¹

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In consenting to present this paper I did so with the feeling that perhaps I have as good right as anyone else to confess for all of us that we know very little about the subject. The suggestions I have to make then are offered in entire humility and with satisfaction only that we are on the road to more complete understanding.

My task is to point out the bearings of results of experiments in the field of mineral metabolism upon our irrational, uncontrolled and largely uncontrollable human dietetic affairs. Only in the case of infants, invalids, lunatics and convicts does it seem practicable to regulate the diet of human beings with the same rationality and particularity with which the successful live-stock farmer habitually feeds his animals. In spite of the difficulties of the task, however, and the indifference of most of us to the economic and rational aspects of our own eating, there are those dependent upon us who should have the benefit of our wisest counsel, even though we put ourselves in the position of saying, "you are to do not as I do, but as I say."

In order to bring clearly to mind the basic principles of nutrition involved in this consideration I must enumerate the functions of the mineral elements in animal metabolism:

As bearers of electricity the mineral elements dominate the whole course of metabolism.

They conduct nerve stimuli, and play a leading rôle in the general process of cell stimulation.

They govern the contraction of the muscles, including those of the heart.

They compose the central agency for the maintenance of neutrality in the blood.

They enter into the composition of every living cell.

They compose supporting structures.

They assist in the coördination of the digestive processes.

¹ Presented at the meeting of the American Association for the Advancement of Science, Columbus, 1916.

They activate enzymes, and through their control of the chemical reaction of the blood and tissues they govern enzyme action.

They unite with injurious products of metabolism, and render them harmless or useful.

As catalyzers they alter the speed of reaction, and the rate of metabolism generally, as measured by oxygen consumption.

Through their effects on osmotic pressure they govern the movement of liquids, and maintain the proper liquid contents of the tissues.

Through their effects on surface tension they participate in the mechanism of cell movement.

Through their control of the imbibition of water by the colloids they govern absorption and secretion.

Through their control of the affinity of the blood for gases they govern respiration.

Finally, they control the state of solution, precipitation, mechanical aggregation, chemical association and ionization of the colloids which compose living tissue.

These then are some of the functions of the mineral elements. Considering their nature and importance it is at once obvious that life could not endure if its complex mineral requirements were not automatically and constantly maintained in almost perfect adjustment. What then are the facts which warrant the practical consideration of this subject? They are that in pathological states these functions are somewhat deranged, and that life as we live it is in many respects highly abnormal, in the sense of differing from that to which human metabolism is attuned; and with our ever increasing social differentiation life puts increasing stress upon the integrity of the body and its normal processes. In relation to food materials there are also important facts bearing on this matter of the mineral nutrients, for, while highly developed processes of food manufacture and efficient world-wide transportation give us the greatest opportunities for correct dietetics that there have ever been, these same agencies open the way to greater unwisdom and abuse in dietetics than have been possible in our more primitive days. The net result is an obligation on our part to prepare a defense of knowledge against the misfortunes of prosperity.

It is my belief that anything like exact quantitative control of human mineral metabolism, as a practical measure, is as impossible as it is unnecessary; impossible first, because any kind of control of human die-

tetics is very difficult; second, because our knowledge of the optimum mineral requirements of human beings is especially slight and fragmentary; third, because the interactions of the mineral elements among themselves affect mineral metabolism in such prominent ways that fixed and definite statements of mineral requirements are likely to be misleading. Exact control in these matters is unnecessary because of the existence of safety provisions for bridging over temporary deficiencies, of a perfection in harmony with the surpassing importance of mineral metabolism.

It is my belief, therefore, that in our present state of knowledge close statements of the mineral requirements of human beings involve a large element of "ceremonious delusion" (borrowing the expression from Thudichum), and that practical advice regarding the mineral metabolism of healthy human beings may most properly be general in character, and in the nature of recommendations of *types* of food products which should predominate in the diet under the various conditions of life, growth and activity.

We shall discuss certain of the mineral nutrients in detail, citing facts as to their occurrence in foods and metabolism in the body.

The one mineral salt which we use as such—sodium chloride—occupies a unique position among the mineral nutrients. Within wide limits it seems to make little difference how much sodium chloride we consume, and the kidneys excrete this salt without marked energy expenditure. Under certain conditions excessive intake of this salt causes slight increase in nitrogenous outgo, but such abnormal consumption would result in indigestion before the increased protein katabolism would become important in extent.

A special method and capacity of the kidneys for the elimination of sodium chloride is shown by observations of Schloss² and of Borchardt.³ It appears that this salt alone fails to cause a loss of water from the body corresponding to the amount of salt eliminated.

Bunge relates our unusual appetite for salt to the potassium content of the diet, and the antagonistic relation between sodium and potassium which exists in metabolism. It takes such a quantity of potassium salt to cause an appreciable increase in the elimination of sodium, however, that I prefer to explain our peculiar relations to sodium chloride

² Schloss: Biochem. Ztschr., 22 (1909), nos. 3 and 4, pp. 283-289.

³ Borchardt: Deut. med. Wochenschr., 38 (1912), no. 37, pp. 1723-1727.

as due to the marine origin of vertebrates and the consequent adaptation of these forms to life in a somewhat concentrated solution of this salt.

Other physiological antagonisms which are often mentioned are those between calcium and magnesium and between calcium and sodium; other less important ones have been shown to exist between chlorine and iodine, and between chlorine and bromine.

The retention of the minerals is also prominently affected by their relative abundance in comparison with the requirement, that is, by the so-called "law of minimum," the least abundant constituent, as compared with the demand, serving largely to determine the usefulness of others with which it is associated in metabolism. The various salts of the diet also affect the solubility of others of this same group of nutrients in important ways.

The net result of these interrelationships among the mineral nutrients is likely to be manifest as a prominent lack of correspondence between the retention and the intake of these substances. The man to whom quantitative relations in mineral metabolism appear to be simple and direct is not embarrassed by an acquaintance with much of the evidence.

Calcium, phosphorus and iron are more likely than other mineral nutrients to be lacking in human dietaries. On this account especial interest attaches to their occurrence in food. Calcium is especially abundant in milk, and is also contained in considerable quantities in eggs, vegetables and fruits. Phosphorus is abundant in milk, eggs, nuts, peas, beans and such cereal products as contain the outer seed coats. Iron is found in largest quantities in beef, eggs, beans, peas, green vegetables (especially spinach) and in the outer seed coats of the cereals. The foods which are poorest in minerals are polished rice, pearl hominy, white flour, bolted corn meal and other cereal foods which lack the outer seed coats. These foods, because of their highly digestible character and lack of salts are apt to be constipating. Magnesium is abundant in the cereals and is not apt to be deficient in normal rations. The magnesium salts of the outer seed coats of cereals contribute a laxative character to foods containing them. Enough sulphur is contained in the proteins of any ration which supplies the nitrogen requirement. Potassium is found in considerable quantities in most normal foods and is also present in sufficient amount in almost all diets.

Manganese, boron, silicon and iodine are among the less abundant

minerals in the body, the presence of which in the necessary quantities in the diet we take for granted. We are just now finishing up in my laboratory iodine estimations on about 950 samples of food products in a study which will show in what foods iodine is found, and which may perhaps show a relationship of the iodine of foods to the prevalence of goiter.

Considering the proportion of minerals to other nutrients needed during the several stages of life there is, from birth to maturity, in general a decreasing requirement, but with periods of increased demand due to unusual functional activity, especially during puberty, pregnancy and milk secretion. The usual mineral requirements of mature human beings are comparatively slight, and are probably satisfied by all normal diets (provided we specify with some particularity as to what constitutes a normal diet). It is, therefore, during rapid growth and during the reproductive life of women that the mineral nutrients are especially in demand, and it is at these times that lack of mineral nutriment and irrational hygiene cause or aggravate a number of well-known pathological conditions which are characteristic of these states of being. We shall mention in detail the mineral requirements at some of these times of greater need.

The normal food of the human infant naturally furnishes its full mineral requirement. This subject becomes of interest in this connection, therefore, in cases of artificial feeding and in certain metabolic derangements. For an artificial food we naturally turn first to cow's milk, which because of high fat and casein contents must be liberally diluted. If water is used, the necessary dilution reduces the minerals, the albumin, the lecithin and the so-called accessory nutrients to an undesirable extent. The best diluent is whey, which anyone can prepare with the aid of a thermometer and a commercial rennet preparation in a few minutes. (The whey must be heated to 68°C. or 154° Fahrenheit to kill the enzyme, before it is mixed with milk.) With combinations of whey, skim milk, cream and milk sugar you can play any dietetic tune you please on the infant organism, and with these foods the intelligent parent can rear any infant which can live at all. The especial usefulness of whey is due to its abundant mineral content in natural physiological solution. It serves as a stabilizer—a corrective. You can do no harm with whey unless you use the evaporated preparation, whey powder. It is possible by an abuse of this food to cause cedema (in weak infants)

through excessive ingestion of minerals, though this would never occur in its proper use.

The commonest metabolic disturbance in infants is gastrointestinal indigestion. Its commonest cause is a weak digestive apparatus and too much fat in the food. Alkali soaps, formed in the intestine, instead of being digested and absorbed are passed off in the feces. Alkalis are lost to the organism; mineral acids are left to predominate; infantile acidosis ensues. What shall we do? Reduce the fat in the food and add sodium citrate to furnish an oxidizable alkali salt.

Because of its low oxidative capacity the infant organism is especially subject to acid intoxication from relatively slight causes, the acid excess being due to the normal acid products of metabolism and to imperfectly oxidized organic compounds, especially beta-oxybutyric acid. We have mentioned the weak digestive apparatus and deficient capacity to handle fat. Inanition also causes acidosis in infants. Fever is a very common cause. In all these cases whey is especially valuable. Many a child has been taken through long sieges of fever on whey. Children do not lose weight rapidly on whey alone. Egg white and fruit juice, especially that of the orange, may be used with whey to advantage; they furnish some nutrient and appreciable amounts of alkali.

The infant is born with a store of iron within its body. During the nursing period this store is gradually depleted, since the milk contains little iron. At weaning time the infant stands in need of iron. This is usually supplied in egg yolk, beef press juice, scraped beef, prunes, whole wheat foods and oatmeal, and some physicians of unquestioned standing recommend spinach. I happen never to have seen spinach used, however, for an infant. Egg yolk is of especial value as a source of iron, calcium, phosphorus and lecithin. But it is an exceedingly rich food. It must be fed with great care on two accounts, first to avoid making the baby sick, because while it is usually well taken it acts like poison to some infants, and second because the value of egg is so great that it is especially unfortunate if you upset the infant by an overallowance, since it may be a long time before it will regain its tolerance for this food.

In connection with the mineral metabolism of infants mention must also be made of rachitis. The cause of this disease is unknown. It is not due *primarily* to lack of minerals in the diet and does not respond

readily to simple increase of minerals in the food, though calcium salts administered with phosphorized cod-liver oil are usually beneficial.

The existence in infants and older children of simple malnutrition of the bones, a common malady in young farm animals, is not well established; and the prevalent imperfections of children's teeth are not certainly related to deficiencies in the diet, but seem rather to be caused by lack of exercise (due to the fine milling of our cereals and the chewing of our meat with a sausage mill), the increasing use of sugar (a readily fermentable, acid-producing food) and increasing use of fruits, the organic acids of which soften the tooth enamel.

In considering the mineral requirements of human beings we may bear in mind the facts that more than three-fourths of the ash of the body is in the skeleton, which includes about 88 per cent of the phosphorus and more than 99 per cent of the calcium of the entire body. Thus in discussing mineral requirements of the organism as a whole we have to do very largely indeed with the skeleton, but we must not over-emphasize these facts, for the quantities involved are no gauge of functional importance, as is illustrated by the fact that iodine, which is found in the body in infinitesimal amounts is just as essential as the pounds of calcium.

Beyond the period of infancy the mineral nutrient which is most commonly lacking in the diet is calcium, though phosphorus also may be deficient, and the iron content of the diet is sometimes inadequate, as evidenced by the existence of anæmia in children.

For purposes of growth our best single sources of mineral nutriment are milk and eggs. Of these, milk lacks only iron, and eggs only calcium. The incubating bird supplements the moderate calcium content of the egg by absorbing an appreciable amount of lime from the shell.

During the reproductive life of women liberal use should be made of the iron-containing foods, such as beef, eggs, fruits and green vegetables, especially spinach, green beans and cabbage. Lactation makes a heavier demand upon the mother for mineral nutriment than any other incident in her life, and the most efficient method of providing the mineral requirement is, naturally, through the use of milk, or foods made from milk.

In old age there seems to be an absorption and loss from the body of much bone substance coincident with the general atrophy of the tissues. This is most apparent in the receding of the processes of the

maxillæ and the absorption of the spongy structure of the interior of the long bones. This appears to be a physiologic process, and we have no evidence that it is affected one way or the other by the minerals of the diet, though it is conceivable that there might be some such influence.

Generally speaking, a high ash content of the food is desirable, since the organism is much better able to handle an excess of ash constituents than to meet a deficiency. It is good practice, therefore, to utilize the water in which foods are cooked, in so far as this can be done without detracting from the acceptability of the food, since the cooking-water dissolves out much mineral matter. An abundance of mineral salt in the diet is also desirable, aside from nutritive considerations, because they contribute a laxative character to the food. Foods which are deficient in minerals are apt to be constipating.

A general character of the mineral nutrients of foods is the predominance of acid or basic elements. If the nutrients are present in the proportions in which they are needed the bases will predominate, and it is probably best that the bases should exceed the acid elements in the diet. It is true, however, that the organism has the capacity to neutralize a considerable excess of acids. Meats, eggs and cereals have acid ash; vegetables, milk and most fruits have alkaline ash. The latter group should be liberally represented in the diet.

The diets which are most likely to supply enough of each of the minerals are those characterized by liberality and diversity. Extreme simplicity of diet is not advantageous. The usual diets of prosperous Americans do not lack mineral nutrients. But we are not all prosperous, and some of us choose unusual dietetic combinations. The central features of improperly chosen diets are usually an undue dependence upon meats and foods made from finely milled cereals or other cereal foods lacking the outer seed coats, and too little use of milk and vegetables.

Those circumstances most likely to lead us into error in this matter are ignorance, poverty, parsimony, dietetic fads, peculiarities of appetite and disordered digestive functions.

Now in conclusion, it is certainly true that we muddle along fairly well without much attention to this subject, but one never knows when he may need additional insurance in the way of understanding. Through my slight knowledge of this subject I was able to save my own son, and that of course seems to me to have been worth while. Then too, though

there be no lives in danger, there is a certain satisfaction which we all take in efforts to direct our affairs with intelligence even though "the worst laid plans of mice and men gang oft aright."

A METHOD FOR SUPPORTING FINANCIAL RECORDS

The readers of the JOURNAL who have responsibility for the finances of any department of a school, of a college, or of business relations, may be interested to learn of the devices now in force within the Association for making easy and adequate an audit of the Association finances.

Two requirements for an audit are universally applicable. The first is some evidence that all money which ought to have been collected has been reported or is shown to be still due, and the second is evidence that all money shown to have been collected has been adequately accounted for either by authorized payments or by funds in hand. These things do not require any particular method of keeping books, but make absolutely necessary some documentary or physical evidence of both receipts and disbursements.

With regard to receipts of money, a system should require that when money is received for reasons which do not compel the receiver of the money to deliver at once equivalent value (such as merchandise, books, etc.), some documentary evidence shall be retained in the office to show how much was received and for what reason. The best evidence for this purpose is a form of receipt, which every remitter knows that he should get whenever he makes payment, so arranged that not only the receipt transmitted to the sender of money but the stub of the receipt remaining in the hands of the receiver of the money shall indicate how much was received. With such an arrangement, it is impossible for the receiver of money to sequester any funds unless he gives an unauthorized receipt, or no receipt, in return; and to this the sender of the money would naturally object.

The Association, in order to provide that the central office and the treasurer may have documentary evidence for satisfying the auditors regarding the amount for which they are actually responsible, has pro-

vided a special form of triplicate receipts, consecutively numbered in bound books, having at the left end, in a single horizontal column, numbers from "one" to "ten," the receipt proper indicating that the amount shown on the margin of the receipt is the amount which has been received. When, therefore, the receipt is detached, at the point indicating the amount received, the next higher number remaining as a stub in the bound receipt book is known to be higher by one number than the amount receipted for; and this is the auditor's evidence of the receipt. Only even dollars are provided for, because dues and subscriptions are in even dollars. As handled in practice, the first copy of each receipt is sent to the remitter, the second, which is on very thin paper, is sent to the treasurer with the funds collected, and the third, which is on thin cardboard, is retained in the central office for reference. The receipt of money from the sales of publications is covered by the delivery of the goods, and may be checked by the auditors through a comparison with the copies printed and the stock on hand.

For covering disbursements, a blank voucher lists the bills which each copy is intended to authorize, with date and amount, and accompanies the original bills; and the signature of some officer of the Association, authorized by vote of the Council to incur debt, is required before the treasurer makes payment. In case the payment is authorized directly by the Council or by vote of an appropriate committee, the voucher form indicates such vote, with the signature of the person competent to justify the expenditure. The back of the voucher form lists the objects for which expenditure is made, and when the accompanying bills do not make sufficiently apparent the object served, the officer approving payment indicates the proper distribution of the charge. To avoid annoying delays in meeting petty current expenses, as carfares, telegrams, expressage, etc., petty cash funds are provided when necessary. The officers holding such funds are responsible to keep account of disbursements from them, and to cover such disbursements by signed vouchers—on receipt of which the treasurer reimburses the officer and charges the money reimbursed to the objects for which the money was originally spent.

This method simplifies the keeping of the accounts, for the sources of each kind of income and the cause of all expenditure are indicated by documentary evidence or by physical inventory.

SUMAC AND ITS USES

Lovers of wild plants and flowers have often admired the sumac and have wondered if it had any use. As a matter of fact, the sumac has served various purposes, besides being decorative.

The wood (and under favorable circumstances, the tree makes a fairly large growth) is very beautiful, being a clear yellow with darker veining. It was more appreciated in earlier times than at present, perhaps because it was procured more easily then than now.

The dried fruit of the smooth sumac (*Rhus glabra*) has had some use in medicine. The berries are astringent and very sour, owing their latter quality to the acid present in their downy covering. According to reliable information, they have been used, though infrequently, for making an acid drink and for a jelly mixture. It hardly seems worth while to use sumac berries for such a purpose in these days, but in earlier times housekeepers had a much more limited list of food materials to draw upon and tested pretty nearly everything in their attempts to secure variety, making use of many things which had no marked merit.

Sumac wood, bark, leaves and peduncles were used by our grandmothers in domestic coloring; for instance, in dyeing black on cotton. Many receipts for such home dyes may be found in the manuals and household receipt books, which so commonly found a place on the home "book-shelf" fifty or more years ago.

PASTEURIZING CREAM

The cost of pasteurizing cream in the manufacture of butter has been estimated by specialists in the U. S. Department of Agriculture to vary, under local conditions, from 6 hundredths to 15 hundredths of a cent for each pound of butter. In comparison with the market price of first-class butter, this cost may be said to be almost negligible. In addition, the process of pasteurization improves the healthfulness of the product.

STUDENTS' CONTRIBUTIONS

The JOURNAL from time to time has received papers from students in Home Economics courses representing work that is often of great interest and value. It seems fair, however, that such material should be presented as students' work rather than with the authority that would come from the experienced teacher or worker.

The JOURNAL will be glad to reserve an average of two pages a month for such contributions if the various schools are interested to send them.

The following paper is by two graduates of Ohio State University, but was prepared while the authors were students in that institution.

It was sent in response to Miss Barrow's request for records of the comparison of home made and commercially made products.

Miss Anna Van Meter, Department of Home Economics, Ohio State University, sends this note: "The data given and the conclusions drawn in this partial report are valuable largely because of the suggestions which they offer for more thorough tests along the same lines."—THE EDITOR.

THE COMPARATIVE COST OF HOME PREPARED AND COMMERCIALY PREPARED FOODS

LEONA C. FRECHTLING AND MARY R. BETZ

The aim of this problem was to determine whether it is more economical and desirable to prepare foods at home or to buy them ready prepared. We considered:

1. The cost of materials. This includes not only the raw materials used, but also glasses, cans, and rubbers. The entire cost of the rubbers, while only one-fifth of that of the glasses and cans was used, as these latter can be used at least five times.

2. The cost of fuel. As we were taking Columbus prices and conditions, we used gas as fuel. There might be some question in regard to the fuel in this work, as in many cases the quantities prepared, such as jellies, were not so large as would probably be prepared at one time in a household. This, of course, would increase the cost of fuel. In baking, this error is eliminated by the fact that the quantities prepared are comparable to household practice. For example, two loaves of bread, cinnamon rolls, Parker House rolls, and short cake were made in one afternoon and baked together.

3. The desirability of the finished product. This was considered only in relation to cost. A low priced but very undesirable product would not be considered cheap in comparison with a higher priced but much more desirable product.

The time was not considered at all, for two reasons. First, in doing

this work we had in mind the housekeeper. Preparation of foods is a part of her profession and therefore her time is already paid for. The same thing is true in regard to cooks and maids, who are now almost entirely paid by the week, and not by the amount of work accomplished. Secondly, the conditions under which this work was done were very different from those in a household, as a very accurate account of all things used was kept, and thus the time of preparing greatly lengthened. However, in summing up the work we have estimated the time ordinarily required to do the work in a household.

The wear and tear on the cooking utensils and stoves likewise were not taken into account, as it was so small in the short time required for this work.

The following is an outline of the foods considered:

1. Canned goods: vegetables, fruits, relishes, dressings, catsup.
2. Preserved goods: jellies, marmalades, preserves.
3. Flour mixtures: pies, cakes, cookies, bread, rolls, doughnuts, noodles.
4. Meals.
5. Desserts.

In making these comparisons we purchased what we thought a good representative sample of the class of goods to be considered, and matched these as nearly as possible with the home products. In the first and second classes of goods we compared by quantities; in the flour mixtures, by weight. With reference to the meals we calculated the cost per person, and took into account what was actually eaten in each case, regardless of whether they were of equal amounts or not.

Comparisons of quality and of price of some of the products will be found in the data following, but there are conclusions that can be made generally in regard to these classes of foods. In canned goods and preserves, and also in desserts, there is a marked difference in both price and quality. Most commercial goods are not so desirable as the home product, and have a characteristic taste. In flour mixtures the difference lies in quality rather than in price. In the case of meals things other than mere cost and flavor entered in—for example, that of having the meal prepared at a definite time. We had the various things of the meal ordered and they were promised to be delivered before the time of the lunch. Lunch time came and the invited guests arrived but the order had not been delivered. After keeping the guests waiting for some

time, we rushed to the nearest grocery and bought what could be served immediately.

There was not time for reheating the preparations. Of course, it is conceivable that this might happen to an order for raw materials, but raw materials can usually be ordered long enough beforehand so that such a delay of delivery would not be an inconvenience, whereas not many prepared commercial products can be kept for any great length of time in the household. For instance, in one of our meals we served ice cream. The quantity needed was so small that it could not be gotten packed, therefore, we were forced to go after it just before serving the meal.

After considering all these food preparations we came to the general conclusion that in almost every instance it is cheaper and more satisfactory to prepare foods at home than to buy them ready prepared.

Comparison of products

FOOD	AMOUNT COMPARED	COST OF COM-MERCIAL	COST OF HOME MADE	TIME	REMARKS
		<i>cents</i>	<i>cents</i>		
Canned peaches..	1 pint	20	7.6297	45 min.	Commercial product had un-cooked taste and was hard and rather tasteless. Home product had a very good flavor.
Grape juice.....	1 pint	25	5.7725	30 min.	Home product a great deal fresher, but otherwise products are very much alike.
Grape jelly.....	1 glass	25	3.1805	1 hr.	Commercial is gummy and rather tasteless. Home product of better consistency and had a fresh fruit taste.
Apple jelly.....	1 pint	50	17.7280	1½ hrs.	Commercial is gummy and tasteless. Home product of better consistency and has a fresh fruit taste.
Orange marmalade.....	1 glass	25	7.0496		Commercial had a very bitter and undesirable taste. It was of gummy consistency. Home product had a fairly good taste, but undesirable consistency.
Catsup.....	1 pint	30	11.6752		Home product had a very good flavor of fresh tomatoes. Commercial had peculiar characteristic flavor, and evidently was colored.

Comparison of products—continued

FOOD	AMOUNT COMPARED	COST OF COM-MERCIAL	COST OF HOME MADE	TIME	REMARKS
		<i>cents</i>	<i>cents</i>		
Salad dressing . . .	$\frac{1}{2}$ pint	30	8.9294	15 min.	Commercial had a sour, mustard taste—very undesirable. Highly colored.
Doughnuts	1 dozen	10	7.5026	1 hr.	Commercial were grease soaked, while home made had a very good flavor. Nutmeg and grease composed all the flavor that could be detected in commercial.
Apple pie	1 pie	10	9.0880	45 min.	Commercial product tasteless, crust quite good, tender and well browned. Home product had a very good flavor and crust was very similar to commercial. Very likely commercial was made of canned apples.
Bread	425 gms. 1 com- mer- cial loaf	5	4.3565	4 hrs.	The home product was very much more desirable in texture and flavor, having a sweet nutty flavor rather than a sour "baker's" flavor.
Cinnamon rolls . .	285 gms. ($\frac{1}{2}$ doz. com- mer- cial)	5	2.9610	4 hrs.	The same comparison may be made of cinnamon rolls as of bread. Besides this home product can always be had fresh while the commercial rolls we got were stale.
Ginger cakes	196.5 gms. (7 com- mer- cial.)	5	4.2162	1 hr.	Home made were lighter, moister, better texture and flavor. Commercial were hard, had a peculiar baker's taste—were much less desirable.
Jelly roll	1 roll	10	12.4020	1 $\frac{1}{2}$ hrs.	Home made much better than commercial. Eggs were fresh in the home made, but in the commercial they were stale.
Sugar cookies	1 dozen	10	8.3000	1 $\frac{1}{2}$ hrs.	The home and commercial products were very similar—but the characteristic flavor of the commercial was lacking in home made.
Patty shells	1 dozen	30	14.1000		Very much alike. Commercial were very desirable.
Lemon ice	1 quart	40	14.5909	1 $\frac{1}{2}$ hrs.	Home product had a good flavor. Commercial did not have lemon taste but a bitter, bity commercial flavor.

FOR THE HOMEMAKER

THE USE OF DIABETIC FLOURS

AMY L. DANIELS AND GRACE DULANEY

Department of Home Economics, University of Wisconsin

Requests often come for information concerning the preparation of food in the home for a diabetic patient. The physician has given general directions, but the one who must carry out these instructions has no knowledge of the necessary detail. The following article should be of service to those who need this help, as well as to teachers of dietetics.—THE EDITOR.

One of the most serious problems which confronts us in the treatment of diabetes mellitus is the supplying of suitable food to the patient. To keep the urine sugar-free, yet give the individual a variety in his food and satisfy his appetite, requires much skill and thought. It is difficult for the patient to adjust his appetite to a low carbohydrate diet. One can easily dispense with the starchy vegetables, but it is the bread, cake and sweets for which the diabetic has a constant longing. Bread is an article of diet which enters into the daily menu of all classes of people more extensively than any other form of food. The desire to give the diabetic a bread low in carbohydrate led to the introduction of gluten bread in 1841. The flour for this bread was manufactured by washing the starch from wheat flour. Following this first attempt there have been many so-called gluten flours and similar preparations put upon the market. Many of these flours are very hard to convert into pleasing and appetizing breads, because of the small amount of starch contained in them. A yeast bread requires starch; therefore, with those flours containing little or no carbohydrate, other leavening agents must be used. Further, the same proportions of these prepared flours cannot be used, because they absorb much more liquid than the wheat flours.

Owing to the difficulty experienced in making palatable dishes from the gluten flours and the uncertainty of their composition, the use of these and similar diabetic preparations has been practically abandoned. However, in 1913 the Connecticut Agricultural Experiment Station published a bulletin containing the results of the analyses of a large number of diabetic preparations. Many of these are made from wheat and

contain more or less starch; others are made from soy beans, lentils, and nuts of various kinds. Since we have these data, there is no reason why some of these manufactured products cannot be used for the preparation of breads and cakes for the diabetic patient and thus satisfy his craving for these foods. Recent experiment work, carried on by many investigators, on the dietetic treatment of diabetes makes a study of the methods of using diabetic flours pertinent at this time.

The preparations used in the formulae given are representative of the various types of diabetic flours. The composition of these is given in the table below.¹

These commercial products were selected on the basis of analytical work, reported by the Connecticut Agricultural Experiment Station.²

Doubtless others that would answer equally well might have been chosen, but since advertisements are often misleading in their statements none should ever be used without knowledge of their composition from an independent source.

The use of sugar in the diet of a diabetic is generally prohibited. In the recipes saccharin is used as the sweetening agent. This is a coal-tar product and, although supplying no nutriment, is a useful means of furnishing the sweet taste in food mixtures. It is about five hundred times sweeter than cane sugar, so only very small quantities are needed. However, it must be used in moderation, because large doses—1 to 1.5 grams—are followed by digestive disturbances. Saccharin in small

¹Composition and cost of diabetic flours

FLOUR	COST PER POUND	PERCENTAGE COMPOSITION			MANUFACTURER
		Protein	Fat	Carbo- hydrate	
Hoyt's gum gluten.....	\$0.14	31	1.6	52	Pure Gluten Food Company
Twenty per cent gluten meal.....	0.25	27	0.5	60	Kellogg Food Company
Soja bean meal.....	0.50	41	20.0	25	Theo. Metcalf Company
Vegetable gluten meal.....	0.50	80	1.5	10	Theo. Metcalf Company
Protosoy soy flour.....	0.50	42	20.0	25	Health Food Company
Lentil brosia ³	0.12	25	1.0	59	Calumet Tea and Coffee Com- pany

² Street, J. P., Report of the Connecticut Agricultural Exp. Station, Food Products and Drugs, 1913, Section 1.

³ In addition to those included in the report, lentil brosia, a preparation of dried and pulverized lentils was used. Its composition and cost are therefore given above.

doses, not exceeding 0.3 gram (5 grains) daily apparently cause no untoward results.⁴ In using saccharin it will be found most convenient to dissolve a definite quantity in a given amount of water, so that one teaspoonful of the mixture will contain a known amount of saccharin. For example, one gram of saccharin may be dissolved in two and one-half tablespoonfuls of water, in which case one-half of a teaspoonful of the liquid will contain one grain of saccharin. The term grain used in the recipes refers to the apothecaries' weight.

Since, according to the newer methods of feeding diabetic patients it is necessary to know how much of the various food stuffs, protein and fat as well as carbohydrate, is being supplied, we have given the nutritive value of the dishes prepared by the various formulae. All measures are level; and in all cases the flour should be sifted before measuring.

Following are rules for the typical batter mixture using various diabetic flours:

MUFFINS

$\frac{1}{2}$ egg	$\frac{1}{2}$ tablespoon melted butter
$\frac{1}{2}$ cup water	$\frac{1}{2}$ cup Hoyt's gum gluten flour
$\frac{1}{2}$ saltspoon salt	1 teaspoon baking powder

Sift the dry ingredients, add melted butter, beaten egg, and gradually the water. Beat thoroughly. Fill well buttered gem-pans about two-thirds full and bake in a hot oven (230° C. or 446° F.) twenty minutes.

Number of muffins—two.

Composition and nutritive value⁵

	grams
Protein.....	12.21
Fat.....	9.11
Carbohydrate.....	14.7
Total calories.....	189.63

POP-OVERS

$\frac{1}{2}$ egg	2 tablespoons Hoyt's gum gluten flour
$\frac{1}{2}$ cup water	$\frac{1}{2}$ saltspoon salt

Mix ingredients thoroughly with a Dover egg beater. Pour into a buttered pop-over cup. Bake in a hot oven (240° C. or 464° F.) for forty minutes.

⁴ Friedenwald and Ruhrah: Diet in Health and Disease.

⁵ The data pertaining to food values are taken from Rose: Laboratory Manual of Dietetics, 1912.

Number of pop-overs—one.

Composition and nutritive value

	<i>grams</i>
Protein.....	6.06
Fat.....	1.54
Carbohydrate.....	7.3
Total calories.....	67.58

YEAST BREAD

- | | |
|--------------------------|---|
| $\frac{1}{2}$ yeast cake | $\frac{1}{2}$ cup Hoyt's gum gluten flour |
| $\frac{1}{2}$ cup water | $\frac{1}{2}$ cup vegetable gluten meal |
| | $\frac{1}{2}$ teaspoon salt |

Mix the two flours and proceed as with the Hoyt's gum gluten bread.

Composition and nutritive value

	<i>grams</i>
Protein.....	40.2
Fat.....	1.3
Carbohydrate.....	32.2
Total calories.....	301.48

ALMOND CAKE

- | | |
|-------------------------------------|---------------------------------------|
| 2 eggs | 2 tablespoons Hoyt's gum gluten flour |
| 3 tablespoons finely ground almonds | 1 teaspoon lemon juice |
| | 1 grain saccharin |

Beat the whites of eggs. Fold in gradually the almonds and flour. Beat the yolks of the eggs; dissolve the saccharin in the lemon juice, add to yolks and fold into the whites. Bake in buttered cake pan in a slow oven (170°C. or 338° F.).

Composition and nutritive value

	<i>grams</i>
Protein.....	20.9
Fat.....	18.6
Carbohydrate.....	9.82
Total calories.....	290.68

ALMOND MACAROONS

- | | |
|-------------------------------------|-------------------------------|
| 1 egg white | $\frac{1}{2}$ grain saccharin |
| 3 tablespoons finely ground almonds | |

Beat the egg white. Dissolve saccharin in one teaspoon of water, add to beaten egg white and fold in almond meal. Drop on buttered tin and bake in slow oven (170°C.).

Composition and nutritive value

	<i>grams</i>
Protein.....	6.45
Fat.....	7.84
Carbohydrate.....	2.45
Total calories.....	106.16

MUFFINS

$\frac{1}{2}$ egg	1 tablespoon butter
$\frac{1}{2}$ cup water	3 tablespoons 20% gluten meal
$\frac{1}{2}$ saltspoon salt	1 teaspoon baking powder

Sift dry ingredients, add melted butter, beaten egg, and water. Beat thoroughly. Fill buttered muffin tins about two-thirds full and bake in a hot oven (230°C.) for twenty-five minutes.

Number of muffins—two.

Composition and nutritive value

	<i>grams</i>
Protein.....	7.07
Fat.....	14.73
Carbohydrate.....	7.8
Total calories.....	192.05

GRIDDLE CAKES

$\frac{1}{2}$ egg	$\frac{1}{2}$ saltspoon salt
$\frac{1}{2}$ cup buttermilk	$\frac{1}{2}$ cup Hoyt's gum gluten flour
	$\frac{1}{2}$ teaspoon soda

Mix dry ingredients, add beaten egg and buttermilk. Bake on a well greased griddle.

Number of cakes—six.

Composition and nutritive value

	<i>grams</i>
Protein.....	24.87
Fat.....	3.37
Carbohydrate.....	36.15
Total calories.....	274.4

YEAST BREAD

$\frac{1}{2}$ yeast cake	$\frac{1}{2}$ teaspoon salt
$\frac{1}{2}$ cup water	1 cup Hoyt's gum gluten flour

Mix the yeast in a small amount of warm water and add to the other ingredients. Mix to a stiff dough. Knead thoroughly, using enough flour to keep it from sticking to the board. Place the dough in a pan to rise. When it has risen to about twice its size, knead again, form

into a loaf and let it rise in the baking pan, until it has doubled its bulk. Bake in hot oven (230°C.) for forty-five minutes.

Number of loaves—one.

Composition and nutritive value

	grams
Protein.....	35.0
Fat.....	1.8
Carbohydrate.....	59.0
Total calories.....	392.2

MUFFINS

$\frac{1}{2}$ egg	7 tablespoons soja bean meal
$\frac{1}{2}$ cup water	1 tablespoon butter
$\frac{1}{2}$ saltspoon salt	1 teaspoon baking powder

Mix dry ingredients, add melted butter, beaten egg and water. Beat thoroughly. Bake in well buttered muffin tins in a hot oven (230°C.) for twenty-five minutes.

Number of muffins—two.

Composition and nutritive value

	grams
Protein.....	14.49
Fat.....	19.39
Carbohydrate.....	7.82
Total calories.....	263.95

MUFFINS

$\frac{1}{2}$ egg	1 tablespoon butter
$\frac{1}{2}$ cup water	3 tablespoons Protosoy flour
$\frac{1}{2}$ saltspoon salt	1 teaspoon baking powder

Add melted butter, beaten egg, and water to dry ingredients. Bake in well buttered muffin tins in a hot oven (230°C.) for twenty-five minutes.

Number of muffins—two.

Composition and nutritive value

	grams
Protein.....	8.58
Fat.....	16.52
Carbohydrate.....	3.9
Total calories.....	198.6

MUFFINS

$\frac{1}{2}$ egg	1 tablespoon butter
$\frac{1}{2}$ cup water	3 $\frac{1}{2}$ tablespoons vegetable gluten meal
$\frac{1}{2}$ saltspoon salt	1 teaspoon baking powder

Mix dry ingredients. Add melted butter, beaten egg and water. Beat thoroughly and bake in a hot oven (230°C.) for twenty-five minutes.

Number of muffins—two.

Composition and nutritive value

	grams
Protein.....	20.83
Fat.....	13.69
Carbohydrates.....	2.06
Total calories.....	214.7

MUFFINS

$\frac{1}{2}$ egg	1 tablespoon butter
5 tablespoons water	4 tablespoons lentil brosia
$\frac{1}{2}$ saltspoon salt	1 teaspoon baking powder

Mix dry ingredients. Add melted butter, beaten egg and water. Bake in a hot oven (230°C.) for twenty-five minutes.

Number of muffins—two.

Composition and nutritive value

	grams
Protein.....	8.83
Fat.....	13.36
Carbohydrate.....	16.8
Total calories.....	222.7

These recipes represent only a few of the possible combinations for diabetic flours. They will, it is believed, offer suggestions as to the way in which these as well as others may be used.

In order that the nutritive value of other recipes may be determined the following table showing the nutritive value of one cup of the various flours is given.*

* *Nutritive value of the diabetic flours*

FLOUR	MEASURE	WEIGHT	PROTEIN	FAT	CARBOHY- DRATE	TOTAL CAL- ORIES
	cup	grams	grams	grams	grams	
Hoyt's gum gluten flour.....	1	113 (4 oz.)	36	1.80	59	396
Twenty per cent gluten meal.....	1	78 (2.8 oz.)	19	0.35	43	251
Soja bean meal.....	1	71 (2.5 oz.)	29	14.00	18	314
Vegetable gluten meal.....	1	113 (4 oz.)	91	1.70	11	423
Protosoy soy flour.....	1	85 (3 oz.)	36	17.00	21	381
Lentil brosia.....	1	113 (4 oz.)	28	0.11	67	381

SEVEN TEXTILE FIBERS

CHARLOTTE GIBBS BAKER

With the development of manufactures, of science, and of the arts constant changes are being made in the textile industry. It no longer suffices to learn a few rules for choosing fabrics and then to rest content, depending on the clerk to help one buy. One must be continually on the lookout for new fabrics, even for the use of new fibers. The rapid changes of fashion, the demand for novelties on the part of the women who buy, and the effort of the manufacturer to supply plenty of new things to be bought, all play their part in bringing about the changes.

Instead of being required to recognize four different fibers we must now know seven, and most of these in varying forms. There are, of course, other fibers which sometimes appear on the market, but for intelligent buying it will suffice to know ramie, jute, and artificial silk, besides cotton, wool, linen and silk. The first three fibers mentioned have been used only recently in sufficient quantity to attract our attention. Ramie and jute are not new, but are comparatively new in the American market in dress and furnishing materials; artificial, or as it is commonly called, fiber silk, is a new product of chemical investigation.

In order that we may place these fibers in their proper relation to the four long tried ones it may be well to discuss all seven that we may have their characteristics freshly in mind.

Cotton, most used of all fibers, deserves first mention. It, by its very cheapness, reaches the masses, and because of its adaptability to many purposes it serves rich and poor alike. A fiber so short that it would seem impossible to spin, a spiral twist acquired just before it leaves its pod saves it from oblivion. This twist gives it elasticity as well as the ability to be spun, and serves to identify it under the high power microscope. The shortness of the fibers causes the thread to be fuzzy, and prevents the cloth from having a luster. When the thread is broken the end is also fuzzy. Cotton lends itself to combination with linen, silk and wool, and the clever manufacturer makes it exceedingly difficult to recognize the cheaper fiber. Mercerization, a process which transforms the ordinary cotton thread into a lustrous strand, which will take dye more readily, increases the usefulness of cotton tremendously, and is now so much used that we sometimes forget that it is not much more than a dozen years since mercerized cotton appeared commonly in our markets.

Wool in point of quantity belongs next to cotton, though in price there is a long distance between them. A scaly structure on the surface of wool, especially marked in sheep's wool, gives it virtues possessed by no other fiber. It is by reason of these scales that wool mats together; that air is held in the spaces of a woollen garment; that it absorbs a great amount of moisture without seeming wet; characteristics which all have their value in clothing. Elasticity, strength and luster also are attributes of wool, and the kink, more or less conspicuous, aids in spinning and also in identifying the fiber. The finish given to the best grades of woollen cloth make them stand the weather better than other materials.

There are a number of fibers commonly classed as wools which vary somewhat from sheep's wool. The more hair-like fibers from different goats and the camel do not possess the felting quality of wool, but on the other hand are more lustrous. Very attractive upholstery fabrics are made of goats' hair. Angora goat hair makes mohair as well as the various angora knitted fabrics. Camel's hair has a number of uses, and we are all more or less familiar with alpaca from the animal of that name.

Wool fiber alone may be spun a second time. Loosely twisted threads such as those in knitted fabrics or worsted goods may be pulled to pieces and the fiber spun again, either alone or in combination with new wool or cotton, the product being known as shoddy.

Silk, the fiber of luxury, has little in common with the others. A very long fiber reaching several hundred yards in length, it has no cellular structure; the surface is unbroken and therefore reflects light, thus giving it a high luster. Its great ability to absorb dyes as well as mineral salts, gums and other substances, makes it possible to increase the weight enormously; thus the manufacturer may adulterate to such an extent that the price is greatly reduced. Our entire dependence on foreign markets for the raw fiber used in manufacturing domestic silks is due to the large amount of hand labor required in raising the worm and in reeling the silk from the cocoons. This labor must be both skilled and cheap, a combination not found in this country.

In reeling silk from the cocoons a certain amount of short uneven fiber is left. This product is not wasted, but after being thoroughly cleaned of the gum which coats it, is carded and spun, as cotton or wool is spun. Spun silk, as it is commonly called, lacks the luster of silk reeled in long threads from the cocoon, and is somewhat fuzzy. This silk is used for

the backs of satins, satiny silks, velvets, and for cheap grade silks; in wearing quality it compares quite favorably with reeled silk, but lacks its beauty.

Pongee is another variety of silk. Certain silk worms grow wild, and feed upon oaks and other trees. The silk produced by them is darker in color, is more gummy and not as perfect as that produced by the carefully cultivated worm fed only on the leaf of the white mulberry tree. The gum of this silk is not easily removed, and the silk cannot be reeled in long threads, therefore the fiber lacks luster and the thread is comparable to spun silk in its structure.

For years chemists of America and Europe have endeavored to make a fiber which would compare favorably with silk. A number of so-called artificial silks have been made synthetically, but each has lacked some desired characteristic. One has not withstood moisture, another lacked strength, a third was not sufficiently pliable, and so on. It is only quite recently that a satisfactory fiber, which can be manufactured at a reasonable price, has been developed. The artificial silk now commonly found on the market is a collodion like substance, made from cotton or wood fiber, put through capillary tubes, hardened in the air and so treated that it will withstand moisture. This fiber may be manufactured at a cost below that of pure silk, and has the promise of a great future.

Linen, with a much longer fiber than cotton, exposes a smooth surface to the light and so produces a lustrous thread. Since the fibers are long there are fewer ends on the surface of the thread, and cloth woven from it soils less quickly than cotton. Straight, non-elastic, when spun and woven the cloth is tough and leathery, particularly when the satin weave is used as in table linen. Through the ages linen has been used in religious rites, where absolute cleanliness is desired, and purple and fine linen for long were symbols of nobility. Though now often replaced by cotton, for many purposes linen is more suitable.

Ramie, a vegetable fiber of antiquity, has until very recently, been used almost exclusively in India, China and Japan. A highly lustrous fiber, in this respect surpassing linen, and very white, its use has been limited by the difficulty with which the fiber is removed from the surrounding woody tissue. Ramie has been used in combination with silk and cotton, its luster making it hard to distinguish when woven with silk, and adding richness when combined with cotton. Japanese and Chinese embroideries on this material have been common in our markets for some years, but only recently have we had the material called ramie linen, by

the piece. As methods for producing the fiber are improved we may expect more of it to appear on the market, and the shortage of European linen due to the war may give an impetus to the importation of ramie from the orient.

Jute, another vegetable fiber, is familiar to most of us in sacking, twine, and door mats, but we do not expect to find it in finer materials. The natural color of this fiber is somewhat darker than linen color, it is harsh and coarse, yet it has considerable luster. In burlap we find the fiber used alone, while in monk's cloth it is combined with cotton in a heavy material. In its natural color it adds a pleasing tone to a more denim-like cotton and jute fabric, particularly when the cotton is in soft tones.

From their very nature then, each of the seven fibers is well suited to some use or uses, and with them all we get a great variety of materials. Because of the constant demand for new fabrics, and the demand for cheap fabrics, the manufacturer and the designer are kept constantly on the alert for new methods of spinning, weaving, combining and treating these fibers. Each season brings new materials and old materials slightly disguised and bearing a new name. The woman who would buy wisely must also be alert, and must receive the new materials with an open mind, considering carefully which are worth buying and which have as their only recommendation the fact that they are novel. A discussion of the fabrics themselves will be left to other papers that are to follow this.

THE FEEDING OF CHILDREN

The attention of those who have to do with the feeding of children is called to the article in this number by Dr. E. B. Forbes, particularly to pages 126, 127, and 128. While part of this article is technical, it is thoroughly interesting, and much of it is in a form that can be applied directly to practical problems. The force of the last sentences in regard to our possible need of knowledge should appeal to every one.

Are there not mothers or housekeepers who have questions to ask in regard to diet? Miss Amy Daniels, of the University of Wisconsin, has been appointed chairman of a committee to answer such questions. Miss Daniels has had much experience, hospital and otherwise, with the feeding of babies. She has been able to give expert advice in many homes. Questions addressed to her will be published and answered in the JOURNAL.

EDITORIALS

"Bogies."—One of the vivid memories of my childhood is the relating by an honored guest of a story of his own childhood experience. He was warned never to go down a certain back staircase in his home, because there were 'bogies' under the stairs. For some months he avoided the staircase religiously until one day he awoke to the realization of the fact that there were no "bogies." Then he rushed down and fell from top to bottom. If he had been told the real reason for the prohibition, that the staircase was a crooked and dangerous one, he might have gone carefully and avoided the fall from which a false reason did not save him.

I wonder if sometimes we do not pursue a similar method in our teaching and writing.

I quote from a recently published article written for housekeepers by a woman of training and experience:

"As a result you see dishes washed in greasy, slimy water, with particles of food floating on the surface of the dishpan. This is most insanitary, and is a splendid thriving ground for all the obnoxious and disease-producing bacteria."

We have no desire to defend dirty dish water. It is wholly undesirable and inexcusable and cannot produce clean dishes. One of the objections to some dishwashing machines lies in the fact that they use the same water over and over again. The woman who uses dirty dishwater will probably offend in still more important ways. Yet the reason given is absurd. The grease and particles of food are after all simply the waste from the meal just eaten, and the dish water will certainly not remain in the pan long enough to breed disease-producing or any other bacteria.

This is only an illustration of the way in which attention may be diverted from truly dangerous practices that exist in many supposedly clean households.

We need to tell the truth about the bacteriology of the kitchen. We need to explain the difference between unsightly, disagreeable, even repellant dirt, and dangerous dirt.

We should go further, and in our whole management of the household and in our teaching in regard to it we should distinguish between aesthetic and sanitary cleanliness. Both are desirable, but one is essential.

There are times in almost every one's life when the former should be neglected.

The reasons for cleanliness lie in common decency, in safety, and in beauty. Let us not confuse the issues.

Practice Versus Preaching. In a similar way we often, in our teaching, present standards that ought not to be maintained under home conditions, instead of emphasizing the underlying principles, and showing how these may be applied in varying circumstances.

A lecturer at Chautauqua one summer said that all bedding, including mattresses, should be taken out of doors and hung on the line every day. The housewife herself should do this if no one else was available. One wondered if she had considered the possibilities of a fourth floor apartment.

A teacher, many of whose pupils lived in four or even two room flats, taught most carefully that all the bedclothes must be taken from the bed each morning and spread upon chairs to air. It was impossible under the conditions to follow her directions and the beds were not aired.

Some of us believe too that even in well-to-do households children should share in the daily tasks and that it is more important for the child to make his own bed than to carry out directions that would prevent this.

A recent text-book says that the refrigerator must be thoroughly washed in a washing soda solution each day. Of course if one is careless and upsets the milk the damage must be repaired; but even observing the old adage that "ladies and gentlemen" use cleansing processes "not to get clean but to keep clean," it would seem that time might be better spent than in washing daily a properly kept and well constructed refrigerator. Why not teach how to save time by care in arranging and handling the materials stored there?

Another book suggests that dishes after being soaked in cold water be allowed to stand fifteen minutes in hot soapy water. One wonders how much time ought to be given in the ordinary household to such tasks.

In a high school where nearly all the girls came from homes of very moderate means these statements were made on the outline of work: "The dinner napkin should be a yard square; paper napkins should

never be used in the home," with no recognition of the extra cost in money and labor involved in the use of the large napkin and of its unsuitability for the ordinary home, or of the fact that in many well ordered homes the despised paper napkin is welcomed at the breakfast table, during the season of summer fruits.

Another high school teacher was not using sewing machines because "the best work is done by hand" so her pupils spent long hours sewing seams by hand, and doing other work that could be done satisfactorily on the machine in a tenth of the time.

Perhaps these are exceptional cases, but there are too many of them.

We should help the homemaker to spend less time, not more, on the care of her house by devising and teaching quick ways of work; by eliminating labor; by showing how high standards of true cleanliness may be maintained without forever cleaning; by emphasizing the fact that after all the home offers higher duties than the care of the house.

We too often tithe "the mint and anise and cummin" and neglect "the weightier matters of the law."

The National Child Labor Committee reports that the Keating-Owen Federal Child Labor Bill (H. R. 8234) passed the House, Wednesday, February 2, 1916, by a majority of 337 to 46. The bill is now in the Senate before the Committee on Interstate Commerce. A letter or telegram to each member of the Committee and to the two Senators from your own state should be sent at once. Many Senators have expressed a desire to know what their constituents want. Let your Senators know now.

Senate Committee on Interstate Commerce: Francis G. Newlands, Chairman; Ellison D. Smith, Henry L. Myers, Willard Saulsbury, James Hamilton Lewis, Moses E. Clapp, Oscar W. Underwood, Henry F. Lippitt, Robert M. LaFollette, Atlee Pomerene, Joseph T. Robinson, William H. Thompson, Thomas P. Gore, Albert B. Cummins, George T. Oliver, Charles E. Townsend, Miles Poindexter.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the JOURNAL price is listed.

The Art of Good Living. French Cookery from the 14th to the 20th Century. (L'Art du Bien Manger. La Cuisine Française du XIV^e au XX^e Siècle.) Compiled and edited by E. RICHARDIN. Paris, 1914, 5th ed., enl., pp. xlvii+946, pls. 27, figs. 113.

The closely printed title page of this volume gives some indication of the variety of material which it offers and of the distinguished names which appear in the list of contributors. The 2000 or more recipes which take up the greater part of the volume are derived from all kinds of sources—some copied from old manuscript, some taken down from the landlords of out-of-the-way inns where a specially liked dish had reached perfection, some contributed by famous chefs, and still others contributed by such well-known writers as the brothers Margueritte, "Gyp," Jules Claretie, etc. Among the contributions from the literary and artistic world the reader will not readily forget Theuriet's enthusiastic description of morel mushrooms, or Coquelin Cadet's eulogy of prune pudding, while he delights to find an old favorite in Balzac's disquisition on coffee as a literary stimulant. Scattered among the recipes are accounts of famous Parisian dining clubs, of the gastronomic adventures of celebrities on their travels, and of the origin of well-known dishes. One of the most interesting and valuable sections is that by the editor, entitled "The Epicures' Geography of France," in which the characteristic food materials and dishes of the different parts of the country are briefly described. The cuts include some clever sketches illustrating the aphorisms of Brillat-Savarin and reproductions of old pictures

representing the preparing and serving of food at different periods. It must be confessed that these reproductions might easily have been made to represent their theme more systematically and completely. In fact, a little less haphazard arrangement would add to the value of the whole book, but these are minor points. The main thing is that the volume is a mine of interesting gastronomic information, for the most part charmingly presented.

How to Cook and Why. By ELIZABETH CONDIT and JESSIE A. LONG. New York: Harper and Brothers, 1914, pp. 249. \$1. By mail of the Journal, \$1.10.

The aim of this little book, according to the editor's introduction, is to be a "first aid" or sort of middleman between the laboratory of science and the kitchen of the school or home.

Every such effort is likely to be criticised by those for whom it is intended as "too scientific," while those whose researches are interpreted in simple language may find errors in facts. Yet such a book as this cannot fail to be helpful in extending the knowledge of what has already been discovered and verified regarding a more rational choice and preparation of foods.

Some sweeping statements are made, such as: "Underdone bread is the cause of more than half the dyspepsia in the land." (Page 39.)

There are a few inaccuracies or misleading statements, such as: "Macaroni, rice, corn meal, carrots, offer practically the same material [as potatoes] at less cost." (Page 92.)

"May" should be more often substituted for "will," as for example in the statement on page 122: Milk "from tuberculous cows will carry the white plague to those drinking it uncooked."

A few of the directions, particularly in the care of food, set a difficult standard for the ordinary housekeeper to follow.

Yet the book is suggestive, helpful and well worth while. More paragraphing would have made it somewhat easier to read.

A Study of Foods. By RUTH A. WADDALL and EDNA N. WHITE. New York: Ginn and Company, 1914, pp. 174. \$0.70. By mail of the Journal, \$0.78.

Thorough preparatory training, and some years of experience in teaching and directing Home Economics in state universities, has admirably fitted these authors to make a useful book for the class room.

While the book makes little original contribution to the subject it has the distinct advantage of telling the story of the foods in fewer words than many other textbooks. Moreover the authors quote fairly and give credit to their sources of information, and the references are well chosen.

Like most recent textbooks on Home Economics, this owes much to the work of the U. S. Department of Agriculture.

The illustrations on pages 116-119 are excellent; appendix II brings the fine photographs of meat, hitherto available only through a state bulletin, within reach of every one.

The general plan and arrangement of the book will make it of service not only for teachers and pupils, but for clubs and for the housekeeper.

Bodily Changes in Pain, Hunger, Fear, and Rage. By W. B. CANNON. New York and London: D. Appleton and Company, 1915, pp. xiii+311, figs. 39.

The chapters of this book on the effect of the emotions on digestion and the nature of hunger are of special interest to students of nutrition.

Principles of Food Preparation. By MARY D. CHAMBERS. Boston: Boston Cooking School Magazine Company, 1914, pp. 251. \$1. By mail of the Journal, \$1.09.

In the *Principles of Food Preparation*, Mrs. Chambers does not definitely state for whom the book was designed. One may infer, however, that it is intended in part for the high school, for in the introduction the statement is made that "simple chemical tests and rough analyses of foods are included in most of the chapters, since in many of the smaller high schools and colleges this work is in charge of the teacher of Household Science."

The Topics for Study or Discussion and the Questions found in this book are very good for high school use. They are comprehensive and require much thought on the part of the pupils. The recipes on the whole are good. The work as planned gives a great deal of practice in the various processes of cooking, many combinations and much variety.

The charts of the composition of foods are accurate and the material wisely selected.

The method of procedure employed fails at two points. First, the students have not a sufficient basis in science or enough training in experimental methods to obtain results accurate enough to draw correct inferences. The author makes this statement: "Remember that the cooking of each dish in perfection is always necessary in order to make the correct inferences which is the object of the lesson."

Second, the experiments often do not deal with fundamental problems of food. For example, the effect of salt on cellulose is studied. Definite amounts of salt should be used to give accurate results. Further, very little is known of the effect of salt on cellulose, since the only published work on this subject is that of H. L. Huenink and Dr. Edward Bartow (1914). Such experiments as those showing the effect of sugar on cellulose, the effect of potassium salts on cheese, that salt in weak solution dissolves globulin, that water dissolves one-third its volume of salt, are unimportant and

secondary in comparison with the principles to be taught.

As to the contents of this book, there seems to be no logical order or sequence of lessons. The study of potato and rice is taken up in the second chapter followed by green vegetables and the study of sugar. This is followed by a number of chapters on a group of protein foods; a chapter on fat; cereals and other starchy foods; flour mixtures and leavens. In chapter four the effect of sugar on cellulose is taken up and then again in chapter eighteen sugar is studied. The material is not organized so that the book can be handled easily by the average high school girl, yet many teachers find the book suggestive and helpful.

Some of the references, such as Jordan, Sherman, and Lusk, given at the end of each chapter, are almost too advanced for high school pupils, while Church, Knight and Hutchison are hardly considered standard at the present time.

Physiological Chemistry. By ALBERT P. MATHEWS. New York: William Wood and Company, 1915, pp. 1040. \$4.25.

This is a unique textbook—a physiological chemistry that makes interesting reading for the student. The encyclopedic character of most of such textbooks renders them less desirable for student use than a better constructed book that contains less material.

Professor Mathews' book is, however, not deficient in material. The first part contains a discussion of the chemical properties of the proteins, carbohydrates and lipins (fats). In the second part is given the chemistry of the mechanism of body changes. Laboratory methods are described in the third part.

Professor Mathews has laid particular emphasis on the application of physical chemistry to physiological processes and has grouped the fundamental principles in an excellent chapter on The Physical Chemistry of Protoplasm. The part on oxidation is the only one which does not appear satisfactory, owing to a lack of illustrative material.

The chapters on the metabolism of carbohydrates and of proteins are particularly to be commended to those interested in food and nutrition.

A Review of the Literature of Phosphorus Compounds in Animal Metabolism. By E. B. FORBES and M. HELEN KEITH. Ohio Sta. Tech. Bul. 5, 1914, pp. 748.

This valuable digest of literature on phosphorus metabolism will prove of great use to teachers and students of nutrition. The material is grouped in a number of parts, including Chemistry of Organic Compounds of Phosphorus, The Phosphorus of Foods, The Phosphorus of Animal Bodies and Products, Normal Phosphorus Metabolism, and Phosphorus Metabolism in Disease.

A Text-book of Military Hygiene and Sanitation. By F. R. KEEFER. Philadelphia and London: W. B. Sanders Company, 1914, pp. 305+8, figs. 47. \$1.50.

Though written for the special purpose of stating clearly and concisely the essentials of hygiene and sanitation as they concern the soldier, this volume has much in it which is of general interest and which is worthy of the attention of teachers of Home Economics.

The great problem of the army hygienist is to keep the soldier in good health, in good condition, and fit. With him things which the theorist may advise do not readily take the place of experience. So, in such a book as this, written by a man of wide knowledge of the subject (the author is lieutenant-colonel in the United States Army Medical Corps and professor of military hygiene at the United States Military Academy), one finds much about food, clothing, garbage disposal, camp hygiene, and similar matters which have had to meet the test of experience under known conditions and careful observation.

An idea of the scope of the book may be gained from the chapter headings, some of which are: Physical training, preventive diseases, clothing, water supply, foods and their preparation, and the disposal of wastes.

Exercise in Education and Medicine. By R. T. MCKENZIE. Philadelphia and London: W. B. Saunders Company, 1915, 2 ed., pp. 585, figs. 478. \$4.

This book contains much information of interest and value to teachers and students of Home Economics.

The place of physical exercise in education is the subject of the first part of this book. The effects of physical exercise upon the muscles, lungs, heart, nervous system, and their relation to nutrition and excretion are considered at length. One chapter of the book deals with age, sex, and occupation as factors which influence the kind and degree of physical exercise. Other chapters are devoted to a history of the development and the essential features of the German, Swedish, and French systems of physical training or gymnastics. A great deal of interesting and useful information is given regarding the opportunities for physical education as offered by the Young Men's Christian Association, Boys and Girls Camps, and the Boy Scout and Camp-fire Girls Organizations. Municipal play-grounds, gymnasias, and public baths are also discussed extensively and a number of model institutions are described somewhat in detail. The development and present place held by physical education and athletics for men and women in secondary schools, colleges, and universities are taken up and the systems employed in a number of such institutions are described.

The second part of the book takes up in a conservative manner the application of physical exercises to medicine; especially considering their value in the treatment of physical deformities like incorrect posture, club foot, and scoliosis. The value of massage and exercises in the treatment of respiratory diseases, diseases of circulation, and constipation is also considered. The exercises recommended for the treatment of the various diseases are described in detail, specific directions for performing the exercises being given and these well illustrated by figures. The great number of illustrations throughout the whole book add to its value.

Civilisation and Health. By WOODS HUTCHINSON, M.D. Boston and New York: Houghton Mifflin Company, 1914, pp. 341 + 14. \$1.50. By mail of the JOURNAL, \$1.61.

It is unfortunate that a popular medical writer with such facilities of expression and versatility in interest does not make sure that his statements are such that they are also always reliable. The desire to please the reader at times leads to statements that are not literally true. In order to bring home a fact hyperbole often takes the place of correct statement.

Figuratively speaking, there may be some remote truth in the following statement, but it is hardly to be regarded as a thoughtful presentation in terms of relative values. "A fly in a house is as dangerous as a rattlesnake, filthy as a louse and as disgraceful as a bedbug."

To illustrate inexactness of statement, we need but cull a few examples. "About thirty years ago we began to get mortality records which really covered all the population and were reasonably accurate and reliable." This is hardly correct in view of the fact that in 1880 the mortality statistics were based on only 17 per cent of the population and in 1910 only 58.3 per cent of the population which resided in the registration area.

Similarly, the statement appears "Bright's disease increased in ten years 110 per cent." The facts: in 1900 the death rate of Bright's disease was 89 and in 1913 it was 102, thus showing in 13 years an increase of only 14.9 per cent.

As is usual with him, the author in this work has presented a vast amount of valuable and thought-provoking substance dressed in catchy literary phraseology and appealing to all types of readers. The variation in content extends from a discussion of The Diseases of Civilization to The Problems of Women in Public Life, The Vacation Habit and Crimes Against the Cow. Despite its variations from accuracy, the volume has a distinct place in the popular literature of today dealing with the problems of health.

America's Gifts to the Old World. A Pageant or Masque for Home Economics Students. By HELEN W. ATWATER and C. F. LANGWORTHY. A publication for the Richards Memorial Fund. Baltimore: American Home Economics Association, 1915, pp. vii + 20. \$0.50, 5 or more copies, \$0.35 each. All rights reserved.

The pageant, in the modern use of the term, has in the last five years become a very popular form of dramatic representation. Although the term originally meant the platform on which any form of "show" was given, it came to have the settled meaning of a costumed procession, and always with the implication of beauty of color and texture. The modern pageant has a certain number of lines, verses, or songs to be spoken or sung, but this is always in a way the minor part of the pageant.

There is never one important personage, or a small group of such, but a large number of people take part, each doing a comparatively small part. It is this fact that has made the pageant such an admirable form of community presentation, and it is this that makes it so admirable for schools. Every citizen, every child, can and should take part.

The pageant prepared by Miss Atwater and Dr. Langworthy, and given by them to the Richards Memorial Fund, is an entirely delightful piece of work. The free verse in which the most of it is written has a rhythm that carries it smoothly and that gives the chance for simple poetical expression without the twisting of words or sentences into a form not easily "understood of the people." Songs in rhyme vary the presentation.

There is more of the spoken word than in many pageants, but no one character has 50 lines, altogether. The introduction offers suggestions as to the dances and processions, but these can of course be greatly varied, by the school giving the pageant, according to the age of the actors and the place of presentation.

The general theme is so clearly stated

in the title that it at once calls up the vision of America presenting to Asia, Africa and Europe, Corn, Wild Rice, Beans, Pumpkin, Squash, Potato, Tomato and their brothers and sisters. What could be lovelier or simpler to arrange than a dance of the waving corn? Or more amusing than one of a flowering potato field? It is perhaps not quite clear from the introduction that at the end there should be a pageant procession to include everyone who has shared the pageant. In an elementary or high school this might well be marched to the music of national songs sung by the spectators.

The possibilities of beautiful, yet simply made, costume, are almost endless. The domestic art classes would find a wonderful opportunity here. If children of elementary school grade give the pageant—as they could delightfully—the speeches might need a little shortening, but most schools would find it possible to give the pageant as written. High school children would find no difficulties at all, while students in normal schools and colleges would find it entirely adequate for them. Wherever there are boy or men students in the same school, they should of course be an integral part of the presentation.

Aside from the beauty of the pageant, and the value of the community effort, the educational value of the information contained should not be forgotten. The names of the authors guarantee the accuracy of this, and each reading makes one realize afresh the careful research and observation that has furnished adjective and epithet.

The school that has Home Economics work and fails to give this pageant misses a wonderful opportunity, while the school so unfortunate as not to have such work will find this an admirable initial effort.

Eduard Merike's Haushaltungsbuch, von W. E. Windigg. Stuttgart: Stecker u. Schroder.

This book presents photographic reproduction of some 34 pages from the household expense book of the German poet Merike

with an introduction of 26 pages by Herr Windigg. It may be mentioned here, not for any light it throws on household accounts or expenditures, but because of the interest it lends to the study of such accounts. Like the "Privy Purse of the Princess Mary" and other reprints of personal or household

expenses, it creates an "atmosphere" which helps carry such a subject in the school room, while to the historical student it would of course yield valuable facts. Merike's account book is unique in that the margins of the pages are illustrated by lively pen sketches.

BOOKS RECEIVED

Mary at the Farm and Book of Recipes Compiled During Her Visit Among the "Pennsylvania Germans." By Edith M. Thomas, Author and Publisher, Quakertown, Pa., 1915, pp. 440, pls. 20, figs. 30. \$2.25. By mail of the Journal, \$2.45. Orders for this book should be sent direct to the author or to the JOURNAL and not to John Hartenstine or Strawbridge and Clothier as given in the review in the February JOURNAL.

Wanted: A Young Woman to Do Housework. By C. Helene Barker. New York: Moffat Yard and Company, 1915, pp. 127. \$1.00. By mail of the Journal, \$1.06.

Woman in Science. By H. J. Mozans. New York: D. Appleton and Company, 1913, pp. 452. \$2.50. By mail of the Journal, \$2.70.

The Work of Our Hands: A Study of Occupations for Invalids. By Herbert J. Hall and Mertice M. C. Buck. New York: Moffat, Yard and Company, 1915, pp. 211. \$1.50. By mail of the Journal, \$1.60.

PAMPHLETS RECEIVED

The Baby's Rights. A list of some of the best books for mothers and nurses. Compiled by the Free Public Library of Newark, N. J. White Plains, N. Y.: The H. W. Wilson Company, 1915. \$0.10. Orders of \$1.00 or over, 50% discount.

Farm Women's Clubs. By Nell M. Barnett. Morgantown, W. Va.: Extension Division of College of Agriculture, West Virginia University, June 1914, pp. 15. (West Va. Farm Bulletin, vol. 1, no. 7).

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Saving Fuel in Heating a House. By L. P. Breckinridge and S. B. Flagg. Washington, D. C.: Government Printing Office, 1915, pp. 35. \$0.05. Supt. of Documents. (Dept. of the Interior, Bureau of Mines, Technical Paper 97.)

Saving Time and Strength in Housekeeping. By Nell M. Barnett. Morgantown, W. Va.: Extension Dept. of College of Agriculture, West Virginia University, 1915, pp. 8. (Circular 8, March 1915.)

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Soy Bean Milk. *Epicure*, 21 (1914), no. 250, pp. 157, 158.

Note on Vinegar. J. S. Jamieson, *Analyst*, 40 (1915) no. 468, pp. 106, 107.

Food Inspection and Analysis and Other Topics. E. F. Ladd and Alma K. Johnson, *North Dakota Sta. Spec. Bul.*, 3 (1915), no. 19, pp. 305-336.

Better Breads by Means of Natural Lactic Acid. A Wahl, *Jour. Indus. and Engin. Chem.*, 7 (1915), no. 9, pp. 773-775. The quality of bread was improved by the addition to the dough of lactic acid produced by *Bacillus delbruecki* (an organism found in germinated barley).

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A Case of Fatal Poisoning by the American Water Hemlock. *Pub. Health Bul. [Mass.]*, 2 (1915), no. 2, pp. 50-52, fig. 1. This plant is often mistaken for parsnips, artichokes, sweet cicely, horseradish, or other edible roots.

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NEWS FROM THE FIELD

National Society for the Promotion of Industrial Education. The ninth annual meeting was held in Minneapolis, January 20-22. A survey of Minneapolis, financed by the city, had been made during the year for the purposes of industrial education, under the direction of the National Society for the Promotion of Industrial Education. The survey was a double one—of the educational facilities and of the industries. A 500 page report gives the results on paper, and by the time the meeting was held there were actual educational results of surprising magnitude, chiefly in the evening classes of the new Dunwoody Industrial Institute, where 1400 men engaged in industry are studying trade subjects for their advancement.

The two days of the meeting had six sessions, so closely following each other that there was hardly time for meals, and sometimes three meetings were being held at one time. Each session's program was crowded with papers, the attendance was large, and there was a general feeling of almost breathless enthusiasm and vitality.

For the first time at such a meeting, there was a large representation of Home Economics workers. The president of the American Home Economics Association, Miss Martha Van Rensselaer, was on the program of the first general session, and the secretary, Mrs. Norton, was also in attendance. One section session was given to the consideration of Home Economics work, at which Mrs. Mary S. Woolman presided and the speakers were Miss Abby L. Marlatt, Miss Josephine Berry, Miss Anna Cooley, Miss Lilla Frich and Miss Carrie Wilkerson of the Minneapolis Public Schools, and Mrs. Hickok of Minneapolis. There was a special dinner for those interested in the women's work, at which Mrs. Woolman

presided. After the close of the sessions Saturday the Minnesota Home Economics Association held the luncheon noted below.

There was also an informal conference on the Smith-Hughes Act, when Mr. Lapp answered questions and received suggestions as to a wording that would define more clearly the Home Economics side of the work to be subsidized.

In all the sessions where the subject came up, homemaking received recognition as vocational work of great importance. It was also brought out clearly, however, that girls cannot be trained for two vocations at one time and that the Home Economics work given in trade schools for girls was pre-vocational and a part of general education, and should be followed by more intensive training for the girl who wishes to change her vocation of dressmaking, power machine work or what not, for that of homemaking. It was evident that there is much to do in organizing Home Economics courses of the many different types needed, but also evident that in this work the Home Economics teachers and supervisors would have the active and constructive coöperation of the women and men whose special interest is industrial education for girls and women.

The Minneapolis Luncheon. The Minnesota Home Economics Association, one of our affiliated societies—Mrs. Pearl Bailey Lyons, President—gave a delightful luncheon at the Hotel Leamington to the visiting members of the American Home Economics Association.

Comment upon the delicious character of the luncheon brought out the fact that Miss Lilla Frich, Supervisor of Domestic Science in the Minneapolis Schools, in addition to her other duties is director of the food department of this family hotel. Her work

should forever disprove the truth of the old saying quoted by the first speaker at this luncheon—"He who can, does; he who can't, teaches."

Mrs. Lyons introduced as speakers Miss Van Rensselaer, the President of the National Association, Mrs. Norton, Secretary, Miss Cooley of Teachers College, Miss Marlatt of the University of Wisconsin and Mrs. Woolman of Boston. One hundred twenty-nine from all parts of the state were present at the luncheon.

Home Economics at the Pan-American Congress. The Second Pan-American Scientific Congress, held in Washington, D. C., from December 27, 1915 to January 8, 1916, in joint session with many scientific and other learned societies, provided much of interest for students of Home Economics, though the subject was not specifically mentioned on the program. It could hardly have escaped consideration for, according to an official report, the Congress "deliberated upon practically every important subject in the range of human activity."

Of matters of special interest to Home Economics workers, the following may be mentioned: Papers presented at the Public Health and Medical Science Section on The Chemical Nature of Vitamines, by R. W. Williams of the Bureau of Chemistry; on The Changing Features of the Food Problem, by Dr. Lafayette B. Mendel of Yale University; and on Housing of Wage Earners, Town and City Planning, Human Side of City Planning, Artificial Illumination, and topics connected with the control of communicable diseases, by specialists of both North and South America.

One of the sub-sections on Education, devoted to the education of women, was planned and presided over by Dean Sarah Louise Arnold of Simmons College. Some of the speakers and their subjects were: Miss Julia Lathrop of the Children's Bureau, on The Education of Women as Related to the Welfare of Children; Prof. Susan Kingsbury of Bryn Mawr, and Dr. Sophonisba Breckenridge of the University

of Chicago, on The Education of Women as Measured in Civic and Social Relations; Dr. Helen Putnam, on The Well-Being of Children as Determined by the Education of Women. Miss Caroline L. Hunt spoke briefly presenting by title a paper on Work for Housekeepers in the Office of Home Economics, U. S. Department of Agriculture.

An important feature of the Congress was the Women's Auxiliary Conference, arranged for the wives and daughters of delegates, by a committee, of which Mrs. Robert Lansing, wife of the Secretary of State, was Chairman. The original idea was to provide entertainment only in the form of receptions, teas, lunches, and other purely social events. Better counsel prevailed, however, and daily morning sessions were held in Continental Hall, at which many subjects of interest to women from one standpoint or another were presented: Pageantry, by Miss Hazel Mackaye; Tomorrow, by Miss Zona Gale; Patriotism, by Mrs. William Cummings Story; The General Federation of Women's Clubs, by Mrs. Percy Pennybacker; The Housing Problem, by Mrs. Albion Fellows Bacon; Women in The Red Cross Field, by Miss Mabel Boardman; and A Pan-American Bureau of Education, by Mrs. Fannie Fern Andrews.

That part of the auxiliary program which bore most directly on Home Economics was changed for the better between the dates of the first and second issues of the program, and again after the sessions began, so that the programs circulated in advance do not give an adequate idea of the meetings as held. As finally given, the program included addresses by Mrs. Henrietta C. Calvin, of the United States Bureau of Education, on The Economic Function of Women; by Mrs. J. H. Stannard of the Garland School of Home Making, on Education for Home Making; and by Mrs. Louis F. Post, on Advancing Ideals for the Home.

Those who attended the final session were led to infer from Mrs. Post's charming but apologetic address that the constructive

side of Home Economics had not been adequately treated in former sessions, and that those who were in charge of the Conference feared that the South American delegates might leave under the unfortunate impression that the American home is in decadent condition. She met the criticism that American women are extravagant in the use of food materials and blind followers of fashion in dress by saying that intelligent discussion in food problems is far more general than formerly and that women's dress is rapidly becoming more healthful and better adapted to different occasions; and of apartment house life by saying that, while, unsuited for families with children, it is not wholly evil since it often puts home life within the reach of the remnants of families, women living alone for example.

It may be that fewer explanations would have been needed if the list of speakers had included a larger number of those who represent Home Economics as taught today in schools of high standing and of workers in other Home Economics fields.

George Peabody College for Teachers. In response to a demand from agents and coöperators in the South, growing out of the great success of the summer work, George Peabody College for Teachers made arrangements to repeat during the winter quarter one of its most notable successes of the summer quarter, 1915. To that end, it is offering, through the hearty coöperation and assistance of government bureaus, two important groups of special courses for Canning Clubs and Home Demonstration Agents.

The classes enrolled during the summer represented eleven southern states. The courses were conducted by government experts in home demonstration work, and Canning Club Week brought together a notable group of pioneers in girls' and women's club work, state agents, county agents, coöperators, the girls themselves, and some of the mothers. The work of the winter quarter is expected to be equally strong in its content and conductors, and just as far-reaching in results.

The courses provided show variety and range and are of a practical nature intended to meet the special needs of Home Economics extension workers of all classes.

A commendable feature of the work is the division of the courses into two groups, Group I offered for the first term only, from January 3 to February 11; Group II extending throughout the entire winter quarter, ending March 22.

Home Demonstration Work. During the week of December 13-18, 1915, the Annual Conference of State Agents in Home Demonstration Work was held at Washington, D. C. There were about thirty-five State Agents, Assistant State and District Agents from the fifteen Southern States present.

The year's activities were reported, not only in the Girls' Canning Club Work, but also in the Home Demonstration Work for Women. Over 6000 women have made demonstrations in their homes. In the Home Demonstration Work the productive side is the first idea considered. Some splendid results were given in raising poultry and selling eggs, butter making, making various labor saving devices and in improving sanitary conditions. A fine opportunity has been afforded in teaching the best utilization of the canned products as well as the fresh products from the winter gardens.

Simmons College. The cafeteria at Simmons College gives a good illustration of what careful and systematic administration may accomplish. It was planned and equipped for 200, yet serves an average of 515 students daily with perfect orderliness and dispatch. From half-past twelve to one o'clock it has been found possible to serve ten students each minute. This has been accomplished largely by putting into the hands of the College Seniors the regulation of the routing of the students, and of the hours when each group may be served.

In the twenty school days of October there were 10,280 meals served averaging 16½ cents each.

If Simmons College had had nine more students this year it would number 1100. Of these 130 are college graduates. It is interesting to know that Wellesley, Smith, and Vassar have each furnished exactly 18 of these graduate students.

The cafeteria, though under the direct supervision of Miss Goodrich, is each year placed in charge of a student who completed the course during the previous year. This plan makes it possible to give a year's excellent experience to some member of the class.

The Household Arts Department of the New Mexico Normal University at East Las Vegas has reconstructed its two year college course into a four year course offering the degree of Bachelor of Science.

An interesting and unique phase of the work in this department is the training of Spanish-American students for rural work in Home Economics.

The equipment is superior and the department is making big strides keeping pace with the modern development of the Home Economics Movement. This department is under the direction of Miss Lou E. Stallman, a graduate of the Kansas State Agricultural College and formerly Instructor in the Iowa State Teachers' College.

East Tennessee Home Economics Conference. The November, 1915, meeting at the East Tennessee State Normal School was the first Home Economics Conference ever held in East Tennessee.

Miss Carrie Lyford, specialist in Home Economics, U. S. Bureau of Education, addressed the conference on the subjects: Standardization of High School Courses in Home Economics, Keeping Home Economics Courses Close to Daily Life, and the Cost of Maintaining a Course in Home Economics.

Other parts of the program varied somewhat from the usual in emphasizing the importance of women's club work in Home Economics, the necessity for mothers' clubs to aid in unifying the home and school in-

terests, and the desirability of "practice house" and lunch room training in addition to class room instruction.

In the unique session "The Apple Evening," the addresses, readings, music and refreshments illustrated the possibilities of the culture and use of apples.

The Boston Trade School for Girls, a part of the Boston public school system, has over 700 girls enrolled, with a long waiting list. It has placed this year more than one hundred and fifty girls in good positions. No more are ready to go out, although calls continue to come. Girls placed for the first time receive from \$6 to \$9 a week.

In this school as in others one of the great difficulties has been to find for instructors women who are skilled in a trade and who can at the same time teach. To supply this need a training class has been established that this year numbered fifteen. The class is given the principles of education, class-room demonstration and practice in the evening school.

This evening school is planned for women who are employed through the day. Many girls who have been placed through the day class come back for further work in the evening. Not only are courses offered in the sewing trades, but also for housekeepers, helpers, waitresses, or brides-to-be in cooking and buying. Miss Florence E. Leadbetter is principal of the Trade School.

The editor of the JOURNAL enjoyed meeting the seven hundred girls and making a short speech to them early in November.

The Kansas Home Economics Association according to its usual custom met in convention with the State Teachers' Association November 12 and 13, 1915, in Topeka.

The chief action of the business meeting was the acceptance of an outline of a uniform course in Home Economics for the high schools of the state, and the decision to print this outline for the use of teachers.

The following program was given:

Differentiation of Home Economics in the Various Institutions, Prof. Elizabeth Sprague, University of Kansas; Preparation and Standardization for Teaching Household Arts, Mrs. Ann Gilchrist Strong, University of Cincinnati; How to Build a Course in Costume and Designing, Miss Florence Hunt, Kansas State Agricultural College.

At the last session the following topics were discussed: The Relation of Home Economics Training to the Needs of the Community, Shall Textbooks Be Used in Home Economics? The Relation of the Home Economics Department to the High School Building and Its Care, Home Economics for the Grades, and Ways and Means of Doing Reference Work in High School.

Miss Julia Stone, state inspector of rural schools, addressed the round table on Home Economics for Rural Schools.

The Alabama Home Economics Association held its second annual conference at the Girls Technical Institute, Montevallo, January 27-29.

Reports were given showing what had been done in Home Economics in Alabama during 1915; various phases of Home Economics were discussed by Home Economics workers in the South; and vocational Phases of Home Economics as seen in California and Elsewhere, and A Survey of Home Economics in the United States were presented by Mrs. Mary Schenck Woolman of Boston.

The Missouri Association of Home Economics at a recent meeting in Kansas City changed its name from Association of Household Arts and Sciences to Association of Home Economics.

The program was largely taken up by a consideration of Home Economics in the Junior College, and the importance, in the teaching of Home Economics, of Hygiene, Exhibits of Food Products, Scoring of Foods, and Textiles and Fashions.

There were exhibits of note books, bulletins and new books. Housekeeping apartments and school lunch rooms in the various schools were visited and trips were made to many places where food and household supplies are manufactured.

Sanitary Flour Bags.—The Chicago Housewives' League has sent a letter to the retail grocers of the city, asking their cooperation in the handling of flour in dust proof, sanitary bags. The League is to publish a list giving the name and address of every Chicago retail grocer who has such flour for sale, and to distribute the list through the city.

"Anyone familiar with the shipping, transportation and dispensing of flour in its present form of packing, knows the trail of flour which leaks from every bag. It is a fact that on the floor of an empty freight car, which has just carried a shipment of flour, will be found a layer of flour an inch or more in depth. If the flour can so easily sift through the sack, it is evident that dust, dirt, moisture and other impurities can sift in. On the docks and freight warehouses, men in soiled clothing have been seen resting comfortably on piles of nice, soft sacks of flour. It is a very common thing to see bags of flour piled directly on the dusty, dirty, damp sidewalk in front of stores."

There are at least two types of sanitary bags on the market; the cotton cloth bag with paper lining, and the paper bag. The latter, of course, is somewhat cheaper, but is not so strong as the paper lined cloth bag. Even this cotton paper lined sack costs the miller only one cent more for each quarter barrel than the sack in present use, and this should be returned to him many times over by the elimination of loss by leakage, breakage or contamination during transit.

Charles Dwyer.—Charles Dwyer, editor of *The Woman's World*, 107 South Clinton Street, Chicago, Ill., slipped and fell on a sidewalk in Chicago on January 17, and died shortly afterward. Charles Dwyer

was born in Richmond, Surrey, England, in 1858. He joined the staff of *The Delineator* as assistant editor; four years later he was appointed editor; he remained in that position until 1906. He then became editor of *The Ladies' World*, and in 1913 was appointed editor of *The Woman's World*.

As one of the notices of his death says: "Mr. Dwyer had earned the affectionate regard of thousands of writers who were contributors to periodicals which he edited."

Mr. Dwyer had many friends among Home Economics workers and his loss will be keenly felt by all who knew him.

Brief Notes. The account of the meeting of the N. S. P. I. E. at Minneapolis was written by Miss Isabel Ely Lord, who was chosen at Seattle in response to the request of that Society, as the repre-

sentative of the American Home Economics Association to bring about coöperation between the two Associations. Miss Lord is a member of the Board of Managers of the N. S. P. I. E. and of the Council of the A. H. E. A.

Miss Arnold, who was appointed at the Council meeting in New York as delegate to the Minneapolis meeting, was unable to attend, and her place was filled by Miss Van Rensselaer.

Several years ago, the Department of Household Arts Education, Teachers' College, published a bulletin "An Address List for Illustrative Material, Equipment and Supplies for Teaching Household Arts." This bulletin is now being revised in order to make it as complete as possible. Any helpful suggestions will be welcomed.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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THE LUX SCHOOL OF INDUSTRIAL TRAINING, SAN FRANCISCO, CAL. (See page 170)

THE Journal of Home Economics

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A GASTRONOMIC TOUR

LENORE HANNA COX

The Man of the Family came into the house in much excitement. "Have you seen that the *Ancona* was torpedoed?" was his abrupt greeting. A feminine chorus "How terrible! Horrible! This frightful war!" responded; and then a plaintive voice asked, "*Do* you suppose the cook was still on her?" A sorrowful silence was the only answer; no one knew, but all feared. A few years ago the Family voyaged to Naples on the *Ancona* and since then that cook had lived in memory and is spoken of with respectful awe. It is great luck to be introduced to the *cuisine* of a foreign country by a genius. During the seventeen days of our leisurely journey no dish was repeated except by special request, so varied was the menu, so versatile the artist. Cooking and service were distinctly Italian, and the Family now rates good Italian cooking with the best in the world.

The Italians follow the Continental custom of the "little breakfast," early coffee, seldom accompanied even by bread, never by butter, which but for foreign consumption would be an almost unknown article in Italy. I recall a boarding-school in Switzerland where the Italian pensionnaires gladly exchanged their portion of breakfast butter for the sugar of the American or English student.

The noon meal, *colazione*, is introduced by the *antipasti*, for which we have no word except the not very descriptive "relishes,"—tiny salted fishes, others dressed with oil, delicious black ripe olives—which Americans are slowly learning to like—crisp fresh radishes, and here for the foreigner, butter, with the sweet, well baked, not-too-white Italian bread. This is followed by a course peculiarly Italian; *maccaroni*, it

may be (*not* the eternally baked-with-cheese of American tables); *risotto*, rice with various seasonings; *gnocchi*, a farinaceous dish that varies with the location, usually our cornmeal mush raised to the *nth* degree. Then a meat course which may be commonplace, followed by one of the Italian cheeses, richer and more succulent than the French cheese, and new or old as one desires. Of this delectable meal Bae-decker remarks, "The usual viands for *colazione* are ham, sausages, cutlets, beefsteaks and eggs." *Pranzo*, dinner, is more often conventional, is served early, and there is a little supper about nine.

What memories wake at mention of these dishes! Memories of quaint, old-world, out-of-the-way *trattorie*, where one finds the native dishes in the native manner. We have expressed a wish for *gnocchi Romaine*, which of course should be eaten in Rome. We descend the Spanish Stairs, lingering as always, to look at the groups of artist's models in peasant costume, and the flower sellers who use the steps as display stands and fill the gray old square with brilliant color. Then we follow our guide, who is also "philosopher and friend," a couple of hundred yards down one of the narrow streets that open from the Piazza di Spagna, opposite the steps. Passing through an archway and along a paved passage we come to a courtyard, with a few stunted trees and a straggling flower-bed, and on one side find the *trattoria* we seek. We are the only women, but our friend is evidently an accustomed guest. It is a very simple place, low-ceiled, bare floor, and the *antipasti* consist only of crisp little radishes and ripe olives; then comes the *gnocchi*, made of potatoes, masked, molded into slightly cup-shaped forms about an inch in diameter, sprinkled with grated Parmesan, dotted with butter or a little oil, and baked to a golden brown; rich and delectable. The "cutlet Milanaise" which follows takes its name from the rich sauce of tomato, truly the *pomo d'oro* the "golden apple" of Italy, used as an adjunct to almost every form of food; and with the cutlet come tiny artichokes, so young, so tender, that they are fried whole in deep oil and eaten with joy. With this, one drinks one of the good clean table wines for which Italy is famous; in this instance (we drink the *vino del paese* whenever possible), it is *Frascati*, which seems to have a classical flavor, though one remembers that Horace preferred *Falernian* probably brought from his estates near Naples.

That city, by the way, is one abounding in sweets. True daughter of the South, it is not only the *dolce far niente* but material *dolces* which

it loves. Here they have borrowed the art of preserved and crystallized fruits from Sicily, where it exists in perfection. It may be imagination but I think *torrone di Napoli* better and richer than all other *torrones*, and each city in Italy boasts its own. *Torrone* is a sort of sublimated chocolate fudge, soft and rich, and full as possible of either roasted filberts or almonds, and is sold cut into luscious looking thick slices—for what seems to the American consumer a most modest price.

Nowhere else does one see macaroni in such vast quantities and varying shapes as in Naples. It comes in tubes, thick, thin or medium; in ribbons of varying widths; in spirals, in balls, in alphabets, in numerous other shapes, sometimes hung on clotheslines to dry in wind and sun, sometimes spread on boards or (shades of sanitary science!) on a nice, clean-swept spot of ground beside the street! But no matter what shape one chooses, or what the manner of its curing (one can so easily believe that the article of commerce is not produced in this haphazard way!), the macaroni of Naples is delicious when fresh boiled, served piping hot, a huge plateful—with a thick, strongly flavored tomato sauce to pour over it and a dish of grated Parmesan cheese. It should be eaten at one of the little tables outside the *Ristorante* in the Galleria Umberto Primo, with a band of the street singers for whom Naples is famous (or notorious, as one's ear decrees) performing opposite, singing, quite probably, "La Bella Napoli." The macaroni will be followed by a *pollo diavolo*—a tiny chicken cooked whole in an earthenware casserole, with onions and all sorts of vegetables and herbs for garnish, especially tiny sweet red peppers. With it is served *finocchio*, stalks of fennel, I believe, not unlike our celery, and if one likes the flavor, exceedingly good, stewed and served with white sauce. Then there would be a sweet, a very light one; perhaps *sbaglione* a rather more substantial form of our egg-nog, in which the egg and milk are slightly cooked, beaten up with the whites and the whipped cream and flavored with Marsala. After this, one is quite inclined, in a full and generous mood to throw a handful of coppers to the singers and the "gamins" waiting round.

As one goes north in Italy, macaroni is superseded as the staple food by bread made from chestnut flour, or from *polenta*; the latter the English compiler of Baedeker defines as "squashed maize" but will be more easily recognized by Americans as yellow corn meal. Polenta bread is our cornmeal mush, made so stiff that it is quite solid and

may be eaten from the hand. A chunk of this, with a quarter liter of wine and an occasional piece of goat's meat or *salami*—a highly seasoned sausage made of mule's meat—is the universal midday meal of the North Italian workman. If he be more prosperous he may buy his polenta bread fried, as in all the streets of the poorer quarters braziers may be found on which slices of mush are being fried in olive oil; and indeed everywhere are *rotisseri*, "roasteries," where almost any meat may be found fried or broiled (all roasting is done before an open fire), and any portion large or small may be bought and carried home. With what horror did our Italian teacher, a gentlewoman in reduced circumstances, look upon the Man of the Family and the writer, one day, as they were introducing a companion, the dignified wife of an English Colonel, to the delights of fried mush in the street in Florence! Each was eating a piece of sizzling hot mush off a scrap of brown paper in the hand, and the Italian teacher passed as though she had never known them. It must be admitted that it was too much for the Colonel too, who had walked on pretending that he did not belong to the party.

A delicious form of *polenta* is the Florentine *gnocchi* served especially well at the *Tazzo d'Oro*, the "Golden Cup," a dim little *trattoria* on the much frequented Via del Calzaioli, one of those tiny arteries of business life that seem so inadequate to Western eyes. For the *gnocchi*, mush is made of the meal cooked in broth and milk. When cold and firm, it is cut into discs, piled prettily on a baking dish, sprinkled thick on each layer with grated Parmesan cheese, dotted with butter (or oil), moistened with consommé and browned in the oven. Corn meal mush can attain no higher heights! Rice is also beloved of the Northern Italian, but seems exotic even when eaten in the form of *risotto Milanaise* in the shadow of the Cathedral at Milan. The shadow of the cathedral at Orvieto brooded gently over a *ristorante* which offered a most delicious "timbale." Do the cathedrals still dream of the fat abbots who so loved the goodies of life?

Venice called us across the peninsula, Venice and the things of the sea! There we found the Etcher, who showed us the Venice of the Venetians, not of the tourist. Of course an etcher loves shadows, so we saw Venice by night; not the Venetian Nights' Entertainments, with swaying gondolas and swinging lanterns reflected in the black mirror of the Grand Canal, but the Venice of the pedestrian: one can walk in Venice, and the wise do walk, along the *riva* with the black water lapping

a foot or two below; across tiny bridges arched like a bent bow; through narrow *calle* called "streets" where two people pass with difficulty; from *campo* to *campiello*, where the whole neighborhood congregates in the evening and the Etcher found innumerable subjects. Every *campiello* has its *trattoria*, every *campo* its more pretentious *ristorante*, where one may find *fegato Veneziano*, as satisfying as its name, and a *frittura mista*,—"little fried things mixed," a most expressive title! If one is finicky it were better not to look too closely at the fried things. Not being imaginative, under the tutelage of the Etcher we found and enjoyed tiny curled up devil-fish (octopi), sea-urchins, baby artichokes, bits of cauliflower, beans, starfish, scraps of liver—in one brown oil-bath blent. This serves very well as a fish course, and the *fegato Veneziano* may follow. This is simply calf's liver, cooked as follows: about half of a medium-sized onion is cut into very thin slices and fried golden-brown in olive oil; to this a pound of liver cut into small pieces is added with half a pint of soup-stock, and cooked till tender, with a bay-leaf and sprig of parsley for flavoring; then a glass of white wine, salt and pepper, and a teaspoon of arrowroot to thicken (corn-starch works as well but is unknown in Italy) and the whole is served in a border of polenta, rice or macaroni, boiled and mixed with a few spoonfuls of grated Parmesan.

Cheese is a very constant ingredient of Italian as of French cookery; it not only adds a toothsome flavor but supplies to some extent the lack of meats. One meat that is common in Venice (common in the sense that it is often met by the tourist!) is the pigeon; can it be that one is ofttime regaled on those overfed pets of the *Piazza di San Marco*?

Our route north lay over the Brenner—that historic pass by which the hordes of Attila swept down upon and devastated Italy, and which two armies are now fiercely disputing;—for the greater part of the way there is no railroad, and so we drove in one of those comfortable, roomy "victorias" that are prevalent everywhere in Italy. It was quite late in the season to attempt the Dolomites, and even in the beginning, at Belluno, the tourist hotels were closed for the season.

In Italy, as elsewhere I imagine, when in doubt about accommodations, follow the military, so our "cocchiere" asked where the officers ate, and we drove thither. It was cold and we had driven in a raw and biting wind all the afternoon. A stove or fireplace was not to be hoped

for, but when we insisted on heat, we were conducted to the kitchen, where we comfortably toasted our toes and watched our dinner in the making. The sole fire was on an open hearth, about eighteen inches high, standing quite away from the wall on all sides, while a huge iron hood hung over it conducted the smoke to the chimney. We were offered high chairs, evidently made for the purpose, on which we could sit and put our feet on the hearth.

On one side the hearth was a crane with a huge iron pot of *polenta* already cooked stiff, and lest it burn, constantly stirred by a very red-faced maid on her knees. Opposite was an open sheetiron oven filled with rows of little spitted birds, all broiling in the heat. We knew quite well what they were, we had seen them in all the markets of northern Italy—they were all the song birds that migrate from northern Europe, thrushes, finches, larks, all caught in huge nets and slaughtered to make not a Roman holiday, but an Italian meal! The spits were being carefully turned by a small boy and the *padrona* herself was basting the birds with hot oil from a dish. They looked good—they *were* good—for we fell from our high estate of indignation, and ate the tiny songsters, served very hot on the spits on a bed of *polenta*, crunching their little bones and drinking their little brains just as did the officers we imitated. With them we had a flask of Chianti in its pretty red and green and white straw jacket; then a salad with Gorgonzola *bianca* sweet and new, and though we felt like cannibals, our last *pranzo*, for the time, in Italy, did not entirely lack elements of success.

THE LUX SCHOOL OF INDUSTRIAL TRAINING, SAN FRANCISCO, CALIFORNIA

The Lux School of Industrial Training is a school for girls founded under a bequest contained in the will of Mrs. Miranda W. Lux.

In 1912 the trustees came into possession of the funds with which to carry out the object of the endowment. Actual instruction began in August, 1912. At the same time a tripartite agreement was entered into between the Lux, Lick and Wilmerding Schools whereby Mr. Geo. A. Merrill, Director of the two latter schools, was made Director of the

new Lux School, thereby securing the educational coöperation of the separate endowments. Under this arrangement each school retains its individual identity, having its own buildings, administering its own funds and maintaining a separate staff of instructors.

The Lick School teaches the machinery trades, prepares boys and girls for technical courses in the university, and trains for mechanical careers in general; the Wilmerding School teaches the building trades and architectural drafting and through coöperation with the Lick School also meets the university requirements in architectural engineering; the Lux School has made provision for girls only, and its curriculum is based upon the various household occupations. In this way each endowment specializes along its own lines, although a student enrolled in any one of the three schools is permitted to pursue some of his or her studies in either of the other schools.

While the three schools show a wide differentiation in curricula, the three student bodies are unified through the various social activities of the schools.

The Lux School admits girls who have completed the grammar grades. Its aim is to give them a thoroughly practical training in all the essential things of a well-ordered home, including plain sewing, dressmaking, millinery, cooking, marketing, table setting, housekeeping, bed making, laundering, dyeing, cleaning, sanitation, heating, lighting, ventilating, house decorating, planning and furnishing, home gardening, physical training, health and hygiene, nutrition, dietetics, and home nursing. Such instruction as is given in mathematics, science, drawing, and in the literary branches is made unusually practical and effective by being kept in constant relation with the occupational work of the school.

The problems of food, clothing and shelter are studied in relation to their social, historical and aesthetic backgrounds and thus give liberal culture which is closely interwoven with actual concrete work. Consistent with the plan of instruction is the arrangement and equipment of the rooms to give the atmosphere of a well-ordered home, and constant association with its essentials. A practice bedroom, living room, dining room, and laundry are in daily use in connection with the instruction of the school. Throughout the building home furniture takes the place of the customary school desk.

The subject matter of the Lux curriculum is made into a network by close correlation between the departments of the school. The details of the work are discussed and planned in advance for each quarter of ten

weeks by the teachers in conference. Each teacher shapes her work to include the needs of the other departments. In this way all studies are taught as closely related parts of one subject. By this system of interlocking, the work is so unified that every moment of time and effort of teacher and student is given its utmost value. The girl is thus trained to see nothing in isolation, but everything in relation to allied subjects.

Tuition is free but there is a charge of three dollars per quarter of ten weeks for practice material. Diplomas are given at the end of four years, but the work of the first two years is arranged with special regard for girls who can remain only that length of time. Those who wish to prepare for the university substitute some of the college preparatory subjects of the Lick School for parts of the Lux curriculum. There is also a post-graduate course of two years for those who may wish to become teachers of domestic branches.

THE CONTROL OF FOOD COLORS

A food inspection decision has been issued by the U. S. Department of Agriculture permitting the use of tartrazine in coloring food products. Investigations have shown this color to be harmless and suitable for coloring foods. It is manufactured in large quantities in the United States. Seven other coal-tar dyes have been permitted in foods since the enactment of the food and drugs act. Samples of all dyes certified by the manufacturers are examined in the Bureau of Chemistry and only such dyes permitted as are free from impurities and harmful substances.

Another decision has recently been issued making more stringent requirements in reference to the certification of coal-tar dyes when mixed with substances not coal-tar dyes. This decision provides that hereafter the manufacturer shall deposit with the Secretary of Agriculture a declaration that every package in which any such mixture is sold shall have a plain and conspicuous statement of the quantity or proportion of the certified dyes present in the mixture.

WHAT SHOULD GENERAL CHEMISTRY CONTRIBUTE TO THE HOME ECONOMICS COURSE, SPECIFIC INFORMATION, GENERAL CONCEPTS, OR SCIENTIFIC METHOD?¹

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A knowledge of chemistry and physics, the two sister sciences, is fundamental to an understanding of any of the other so-called natural sciences; hence, a knowledge of chemistry and physics is fundamental to an understanding of any applied natural science.

A large part of Home Economics is household science, *i.e.*, an application of the natural sciences to the problems of the household. The woman who would manage her household efficiently to-day must know something of the natural sciences she is constantly trying to apply. She may be grateful if her maid possesses mere information; but she herself, the forewoman, will not be content without a knowledge of the why. Granted that in Home Economics the aim is to produce educated women, not merely trained servants, then we must look well to the foundation of pure science on which this educated woman may build. This science foundation is physics and chemistry.

The study of physics should precede chemistry. No one can teach chemistry without promptly discovering that if his students have not studied physics, he must, perforce, teach some physics along with the chemistry; *e.g.*, he must teach physical state, solubility, specific gravity, heat, thermometers, the barometer, Boyles' law, the law of conservation of energy. We may call the subject taught chemistry, but it is physics and chemistry so intimately combined that we cannot separate the two. Each is a study of matter. In the broader sense chemistry is a branch of physics but a branch so large that it rivals the parent stem.

What should the course in general chemistry contribute to the education of the Home Economics student, specific information, general concepts or scientific method? It should contribute all three. If properly taught, chemistry is bound to contribute the first and the last; the last, scientific method, should be developed through the acquisition of the first, specific information; possessed of these two, specific information

¹Presented at the fifteenth meeting of the Central Association of Science and Mathematics Teachers, Chicago, 1915.

and scientific method, the student necessarily possesses the third, general concepts.

What the student actually will gain from the course in general chemistry will depend very largely on how it is taught. Chemistry should develop primarily the power of close observation, exact thought, and logical reasoning from cause to effect. Acquisition of knowledge in this way means development of the scientific method of study, and hence the development of a scientific attitude of mind. These three, definite information, the scientific method of study, and a scientific attitude of mind, are essential to the mental development of the Home Economics student. Too much of what passes for education in Home Economics is mere information. The person possessing mere information about science, though perhaps very glib and daringly decisive in expressing that information, is quite helpless when confronted by unfamiliar questions; not so the student trained in pure science; trained in reasoning from cause to effect, she may foretell, with considerable assurance, the probable answers to unfamiliar questions.

Through chemistry the student must acquire certain specific information: she must learn primarily the meaning of matter; must learn respect for matter through gradually comprehending one of the great fundamental laws of all matter, the law of the conservation of mass; she must learn what matter is made of, and hence the meaning of element; must learn, through studies of chemical combinations of elements, the meaning of compound and of chemical change; must learn to differentiate between chemical and physical changes, and also between compounds and mechanical mixtures; must learn the meaning of oxidation and reduction; must learn to distinguish between acids, bases, salts; must learn what neutralization is; must learn to classify elements not merely according to their physical nature as gases, liquids, solids, but also according to their chemical nature as acidic or basic; should learn simple qualitative tests for the elements, and for the more important acids and bases.

Through quantitative studies the student must grasp the meaning of the law of definite proportions, and in turn, the law of multiple proportions. By quantitative studies is not meant quantitative analysis, but other types of quantitative experiments, as the synthesis of water by weight, by volume, the oxidation of metals, the reduction of metallic oxides, neutralization experiments, and many others.

It is of primary importance that the Home Economics student should

study in detail at least the twelve elements of which the human body is chiefly composed: oxygen, hydrogen, nitrogen, carbon, sulphur, phosphorus, sodium, potassium, magnesium, calcium, iron, chlorine. In addition to these, fluorine, bromine, iodine, and silicon should be studied,—not necessarily because at least three of them occur in traces in the body, but because their study will make more complete the study of the other twelve.

Obviously, the study of any element includes the laboratory study, not only of that element in the free state, but also of its simple inorganic compounds.

In this connection it is well to note that the laboratory preparation of an element consists in isolating that element, not in making the element. Compounds may be made, but elements, never!

Oxygen is usually the first element studied. This at once leads to a consideration of combustion, and this, to oxidation. If the study of oxygen is followed by that of hydrogen, and this by their compounds water and hydrogen peroxide, excellent opportunities are offered for emphasizing the meaning of matter, element, chemical change, compound, and the laws of definite and multiple proportions.

Directly, the so-called atomic theory should be begun. Extreme care must be taken in developing the atomic theory,—extreme care lest the student confuse theory with fact. A somewhat wide experience seems to demonstrate that in the mind of the ordinary student, fact and theory in chemistry are identical. To avoid this fallacy, the teacher must differentiate very clearly between facts, and the theory elaborated to explain these same facts. A number of similar scientific facts lead to the enunciation of the natural law governing these facts; or in other words, to the discovery of one of nature's laws. A theory, in science, is a sort of mental picture manufactured for the purpose of aiding the mind to understand a group of similar facts and the natural law or laws controlling them. Thus, the atomic theory gives a logical explanation, and enables the mind to form a mental picture of the union of oxygen and hydrogen in the definite proportions of 8 to 1 by weight to form 9 parts of water by weight, and in the definite proportions of 16 to 1 by weight to form hydrogen peroxide.

But the atomic theory fails to explain why oxygen and hydrogen unite by volume in the proportion of 2 to 1 to form 2 volumes of water vapor. The student should learn that this fact, and other similar facts concerning the chemical union of gases, led to the enunciation of Gay-Lussac's

Law of Gaseous Volumes. Whereas the atomic theory fails to make this law clear to the human mind, it is made clear by the development of Avogadro's Hypothesis; this, in turn, is theory, but a theory so well substantiated by facts that it is often spoken of as Avogadro's *Law*.

Naturally in connection with the atomic theory, memorising the atomic weights of the elements should be begun. The theory of valence, which logically follows the development of the atomic theory, is really an extension of the atomic theory, and an extension which leads directly to the chemical equation,—that tangible short-hand expression of all the qualitative and quantitative facts involved in a chemical reaction. Rarely does the ordinary student understand the writing of the chemical equation. It is easily mastered if developed gradually, logically and repeatedly by the teacher. The chemical equation should be no strain on the student's memory; the equation itself should never be memorized, but the facts which it represents should be memorized. The chemical equation is a short-hand concise expression of certain definite facts which should be already fixed in the memory.

Earlier in this paper it was mentioned that the student should learn simple qualitative tests for the more important acids and bases. Obviously, these should be learned in logical connection with the study of the fundamental element from which the acid or base is derived. Whether the study of general chemistry should be complicated, as it often is, by a premature attempt to explain the theory of solutions, is a serious question in the writer's mind. The atomic theory must be taught as a means to an end. If the student grasps this theory with its attending theory of valence, she will have done well. The theory of solutions may well be left to the definite study of qualitative analysis.

In connection with the study of oxygen and hydrogen, oxidation and reduction should be begun; I say, begun, because these processes, like many others in chemistry, are comprehended only by continued repetition and classification of the principles involved, as other illustrations are met with in the progress of the study.

So, as each new element and its compounds are studied in turn, each fact learned must be grouped in the student's mind with similar facts; otherwise, the study of chemistry soon becomes reduced to an attempt to memorize mere isolated facts,—a feat manifestly impossible. Chemistry learned in this way is of no value pedagogically. Such an attempt is futile as a means of grasping even the specific information of the science; still more is it futile as a means of developing the scientific method.

Science is classified knowledge. Only by experiment and by gradual classification of the truths determined, does a science become developed; only through proper classification of the truths involved, does it become possible to comprehend that science. Only by continued repetition of these truths, and a habit of classifying each new truth learned, does that science become a part of the mental equipment.

It is by iteration and re-iteration of the laws of chemistry, as these are illustrated in the progress of the study of the elements and their compounds, that these laws become impressed upon the mind. For example, the law of conservation of mass, and its sister law in physics, the law of conservation of energy, are too deep and far-reaching for the student to grasp their full meaning, except through constant applications to illustrations of the truths which they express. Even so, it often seems that it is only in maturity that the human mind fully grasps the final significance of these two great fundamental laws of the universe.

Finally, the Periodic System of the Elements is a magnificent culmination of the study of the various elements and their compounds. Mendeleeff's arrangement of the elements according to increasing atomic weight, emphasizes the chemical similarities of certain groups of elements which appear at regular intervals in the series. It brings into bold relief the characteristics of the various families of elements, and enables the student to gain some perspective of the elements of which matter is composed. The periodic system is a most fitting and impressive climax to the study of general chemistry.

If there is time, a brief study of the main types of the so-called organic compounds of carbon may well be taken up in the course in general chemistry. Of course, if possible, the student needs a separate course in organic chemistry. In any case, whatever is undertaken in the line of carbon chemistry must be from the standpoint of constitutional formulae as far as these are known; any other study of these organic compounds will soon lead to hopeless confusion. In connection with such study of the types of organic compounds, hydrolysis, and oxidation, and reduction should be especially emphasized; hydrolysis, because it is the fundamental reaction by which the food-stuffs are prepared for absorption into the body; oxidation, because the body returns its foodstuffs to the inorganic kingdom in highly oxidized forms; reduction, because it is by reduction that the vegetable world again transforms these highly oxidized inorganic materials into food-stuffs for the animal economy.

In conclusion, the Home Economics student should gain from the

course in general chemistry certain specific information concerning the elements, at least those of which the human body is composed; but the acquisition of this knowledge should be in every respect upon a thoroughly scientific basis, whereby the facts, laws and theories of chemistry are logically developed, to the end that the student shall become imbued with the scientific method of inquiry and of thought.

THE USE OF THE THERMOMETER IN THE COOKING OF SOFT CUSTARDS

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The value of the thermometer in candy making and the difficulties in recognizing the ordinary coating of the spoon test for soft custards led to an attempt to use the thermometer as a means of detecting the stages in custard cookery.

The following methods were used and results obtained.

Custards were made, using 1 whole egg, with 1 tablespoon of sugar, to 1 cup of milk. Cooking was carried on as usual, in a small double boiler, over a low flame, and the mixture stirred slowly, but constantly. Care was necessary, as in candy making, to take exact observations, and to prevent rapid cooking at the critical temperatures.

When the first coating of the spoon appeared, at 80° C., or 176° F., two tablespoons of the custard were removed to a small dish, and at each succeeding $\frac{1}{2}^{\circ}$ in temperature a similar portion was removed. Thus, a complete set of samples was taken up to 85° C., or 185° F. A remarkable series of gradations was thus obtained, from the thin custard of uncooked flavor at 80° C. to the thicker, but smooth, custards with delicate flavor at 82 $\frac{1}{2}$ ° C., or 180 $\frac{1}{2}$ ° F., and 83° C., or 181 $\frac{1}{2}$ ° F., and the fine curdle, with a less delicate flavor at 83 $\frac{1}{2}$ ° C., or 182 $\frac{3}{4}$ ° F., followed by the increasingly heavier curdle.

Having obtained the optimum temperatures of 82 $\frac{1}{2}$ ° to 83° C., the next question was how to care for the custard so that the cooking would be immediately checked, and the curdled stage prevented. It was found

¹ Assisted by Charlotte Urbain.

that if allowed to stand in the hot pan, even though removed from the water, the cooking continued about the edges sufficiently to cause a slight curdle. Pouring immediately into another dish always prevented the rise in temperature, and a smooth custard was insured. $82\frac{1}{2}^{\circ}$ C. was found to give excellent results and was not so near the danger point as 83° C.; it is therefore, to be recommended.

The next part of the work was to find out the effect of an increased number of eggs and the effect of cornstarch on the visible curdling point. Two eggs to 1 cup of milk were used. Thicker custards were obtained at the same temperatures, the curdle was more evident at $83\frac{1}{2}^{\circ}$ C. However $82\frac{1}{2}^{\circ}$ C. still gave a custard of excellent consistency. When 1 egg and 1 tablespoon of cornstarch were used to 1 cup of milk, the resulting product showed the same range of differences as an ordinary custard, except that the curdle appearing at $83\frac{1}{2}^{\circ}$ C. was only slightly visible because it was held together by the cornstarch.

The last part of the experiment was to find out the comparative curdling temperatures of custards made wholly of egg whites, and custards made of egg yolks. The proportions used were 2 yolks or 2 whites to 1 cup of milk. The same method of cookery, with the removal of samples at different temperatures, was followed as in the work with whole egg custards. The range for coagulation of the egg white was greater, and the curdling temperature lower than for whole eggs or egg yolk. The coagulation began to show at 56° C., and continued very slowly to 80° C., when it began to thicken noticeably. The thickening power increased favorably until 82° C. which showed the best custard of the range. At $82\frac{1}{2}^{\circ}$ C. the custard was slightly thicker, and at 83° C. a curdle appeared. The curdle then continued to increase rapidly. Beating the egg white made the curdle more marked.

The custard made of yolks gave a thin coating on the spoon at 80° C., and at 82° C. the spoon was coated well. From 82° C. the custard increased in thickness and kept smooth until $84\frac{1}{2}^{\circ}$ C. was reached, when a fine grain began to show.

The final conclusions reached from this entire piece of work were:—

The thermometer, carefully used, is an exact test in the cooking of soft custard.

The curdling points for custards are:

Whole egg $83\frac{1}{2}^{\circ}$ C.; white 83° C.; yellow $84\frac{1}{2}^{\circ}$ C.

The optimum temperatures are:

Whole egg $82\frac{1}{2}^{\circ}$ C.; white 82° C.; yellow $83\frac{1}{2}^{\circ}$ C.

THE TRAINING OF HIGH SCHOOL TEACHERS IN AN AGRICULTURAL COLLEGE¹

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A recent study of agricultural colleges in the middle West makes it evident that such colleges are making a particular effort to train teachers of agriculture, Home Economics and manual training; and that gradually, they are extending their work to the training of teachers of other subjects especially science and mathematics. This paper is confined to the experience of the Iowa State College in training teachers of Home Economics.

There is considerable evidence that most of the 600 women students of the Iowa State College are looking forward to teaching as their immediate career following graduation. Last year there were 42 women in the senior class in Home Economics. Forty of them were registered with the Appointment Committee for teaching work. This year, there are 72 in the senior class in Home Economics and 62 of them have thus far registered with the Appointment Committee. Further evidence of the interest of the women of the Iowa State College in teaching is furnished by the large extent to which they are electing education courses.

The present courses in domestic science and domestic art require 6 hours work in education, with the course in practice teaching; other work is elective. Yet more than half of the present class will meet the requirements for the first grade state certificate; that is 14 hours in education and 6 hours in psychology. The present junior class is electing education almost unanimously and practically all of next year's seniors will meet the 20 hour requirement. It should be said in extenuation of the failure of possibly one-third of the senior class to meet this requirement that the work in education was not strongly emphasized until two years ago. At that time, the largest number taking courses in education in one semester was 38. At the present time there are 228. This has been brought about by properly calling the attention of students who plan to enter the teaching profession to the necessity of meeting the requirements of the better high schools and obtaining the first grade certificate.

¹ A paper prepared for the Conference of the Commissioner of Education, Department of Superintendence, National Education Association, Cincinnati, 1915.

If the fact is fairly well established that we are training teachers, it will be worth while to examine the course constituting such training: first, the Home Economics course as a whole; following that, the work in education in particular. The Home Economics courses appearing in the present catalog are a course in domestic science and a course in domestic art. These courses together with the course in science have the following requirements in hours.

Domestic science, 19½ hours

	hours
Cookery.....	9½
Food and dietetics.....	6
Home nursing.....	1
Household management.....	3½

Domestic art, 22½ hours

	hours
Sewing.....	4½
Dressmaking.....	4½
Applied design.....	4½
The house.....	4½
History of art.....	4
Personal hygiene.....	1

Science, 48½ hours

	hours
Botany.....	5
Chemistry.....	21½
Physics.....	6
General Zoology.....	4½
Physiology.....	8½
Bacteriology.....	3½

In *general culture work*, that is, English, literature, history, language, mathematics, sociology and public speaking a total of 30 hours is required. In psychology and education a total of 9 hours is required. This leaves 8 hours of elective, the total required for graduation being 139 hours.

An examination of the above course shows a thorough scientific basis for the work in domestic science and enough general culture work to give a broad view point. At the present time, the elective opportunities are used chiefly in the field of education in order to meet requirements for certificates. It should be added that the present facilities of the college have not permitted the development of institutional courses; that in time these will be developed and then a greater elective opportunity will be open to the women who look forward to some kind of a career before entering homes of their own.

The faculty of the Home Economics division has been chosen quite largely from Teachers College, Chicago University and sources which have tended to give an educational point of view. This enables the division in all of its work to keep in mind the public school service later rendered by the teaching work of their graduates. The effort is made in all of the work to avoid mere cooking and sewing and to give the student through Home Economics lectures and readings a broad outlook, and to point out the large possibilities for good work in Home Economics; the opportunities for teaching high school girls and future homemakers the larger meaning of scientific living and practical economy in the home; and the necessity of right living.

The Home Economics students who meet the requirements of the department of agricultural education and the State Board with reference to a first grade certificate, take their professional training about as follows: in the sophomore year they take a three hour course in general psychology followed by a three hour course in educational psychology; in the junior year they take a three hour course in methods of teaching, a course dealing with factors in the teaching process, types of lessons, the steps in each type, the assignment, questioning, lesson plans, and similar topics. This course is followed in the same year by a course in the principles of education, a course dealing with aims and educational values and bases of education,—the biological, sociological and psychological in particular. Because it is not provided for definitely in any other place, and because of the discovery of the need for such work by keeping in touch with students who have gone out from the institution, this course in the principles of education has been modified by taking a third of the time for problems of class room and general school management.

The particular work in education for the senior year is a three hour course in special methods and practice teaching running throughout the year. The Ames public schools are available for practice teaching and the work is organized from the fifth grade through the second year high school. Each student teacher has at present a total of 18 lessons under the direct supervision of a competent critic teacher and the director of practice teaching who gives the special methods in this course, frequently visits and observes the teaching work and always follows such visits by a conference with the student for the purpose of discussing the work. The number of lessons is to be extended to 36 as soon as possible. The student's plans are submitted in advance, giving oppor-

tunity for criticism or change. She observes a few classes and gets acquainted with the situation before beginning her own teaching work and if her work does not proceed and develop properly the critic teacher may at any time take charge of the class, teaching for the student, the lesson which she had planned to teach, thus enabling the student to profit by the superior teaching ability of the critic teacher.

The work in special methods, carried on with the practice teaching, reduces and brings into usable form the previous work on lesson planning, assignments, and questioning, but its particular problems are the making, criticizing and execution of 36 lesson plans, and the organization of courses of study, particularly a one-year course of study in Home Economics properly balanced and a four-year course in Home Economics. Each student in the class is required to satisfactorily plan the necessary number of lessons and detailed work for these two courses. There is further work upon equipment and this work is planned in such definite form that the student is prepared to go into a new high school situation, plan out the equipment, order it and supervise its installment. There is further work upon the examination and criticism of texts. This is a line of work which has increased tremendously in the last few years and must continue to increase with the rapid multiplication of common school and high school texts in Home Economics. Because of the fact that the teacher of Home Economics in the high school is frequently called upon for grade work, considerable attention is given to organizing suitable home Economics work in the lower grades and its proper coördination with the other school work. Also because of the increased attention through legislation and otherwise to Home Economics work in the rural schools some special attention is given to the organization of work for the rural schools, to providing equipment at slight expense, and particularly to organizing work around the hot lunch for the children in the rural schools who come long distances and so cannot return home for the noon meal.

The entire work in practice teaching and in special methods is strongly reinforced by the fact that the department has fully under its control the organization of the Home Economics work in the local public schools. Each member of the class in special methods is made familiar with the plan of the work as it is organized; is made to appreciate the problems involved, and the adjustment necessary, and in this way gets a good idea of what it means to go into a system of schools and organize a course in Home Economics. The course in the Ames public schools has been

a growth and has been modified in keeping with new ideas so that it has at all times had the appearance of a live, active, course of study, rather than a dead, predetermined situation to be mastered and imitated.

The course of study as at present organized is about as follows: in the 5th grade, one hour per week is devoted to the early American home. It is closely correlated with the American Pioneer History work outlined for that grade. The Puritan home is studied as to available food, methods of cooking, utensils, etc., including the working out of such projects as the grinding of corn, baking with hot stones, candle making, soap making, and drying apples. It includes a study of the Puritan home as to shelter, means of lighting, clothing, and the processes of washing, combing, dyeing, spinning and weaving. The 5th year work also includes attention to southern homes and further attention to the early Iowa homes. The 6th year work requires one period of one hour per week throughout the year upon sewing. In the 7th year two periods of one hour each per week are required and the work is divided between practical problems in sewing and beginning food work. The historic viewpoint is retained more or less in this grade. In the 8th grade the work in foods is carried for one period per week throughout the year and the effort is made to give a somewhat comprehensive view of this field of study and its possibilities,—the food principles, the effect of applying heat, simple recipes and suggestions for home work. The 8th grade work also involves work in housekeeping one day per week throughout the year and for this work it has been possible to take the girls into actual homes, the groups alternating their work so that in the course of five or six weeks, girls in this class have opportunity to apply their knowledge to different phases of home work.

In the first year high school the work is carried for five double periods per week throughout the year. One period each week throughout the year is devoted to work on the house. This involves such questions as planning the interior, exterior, plans and decorations, selection of the site, structure for warmth and convenience and sanitation; furnishing of the home, pictures, draperies, etc. These problems are worked out, not only through visiting and observation of actual homes including houses under construction but they are also worked out through plans for the modification of the girls' own homes and through further plans for the construction of a home which is conceived more or less ideally. The other work of the year is divided between foods for the first half and clothing for the second half; standard lines of work being observed

and the effort being made at every point to secure practical notions and to develop projects which require the using of the information by students.

In the second year high school one double period per week through the year is devoted to the history of the home. This work is offered first this year with some misgivings but it is thought that it will develop a viewpoint which is thoroughly worth while. The rest of the time is divided between clothing for the first half of the year and food for the second half. The work in foods is deferred for the second half so that the senior students who do the teaching may have the advantage of some work in dietetics, in order to better carry the work planned for the high school. The above brief outline of the work which is actually carried out in the public schools is given in order to give a fuller appreciation of what it means in the training of teachers to have in hand the organization and working out of such courses. The staff are agreed that this is a very significant part of the work in training teachers.

It is with the same thought in mind that *home credit work* in Home Economics has been organized and offered to high school students and that classes for mature women have been conducted in afternoons and evenings in the high school Home Economics laboratories. The home credit work has shown the possibility of tying together the school work and the home duties of the pupils. It is possible for pupils to earn a total of two credits by home work in Home Economics. Two-thirds of a credit may be earned by cooking projects and this is so organized as to require certain undertakings and make others elective, all of the undertakings being such as supply some of the principles of food work developed in the high school classes. This has tended to interest the girls more fully in the home work and thus secure the proper attitude toward home work and the real purpose of high school work in Home Economics. Two-thirds of a credit may be earned by a student in sewing and two-thirds of a credit in general housework. The limit of this paper will scarcely justify entering into the details of these plans. The work has been carried far enough, however, to justify its further extension and to encourage the senior student who will go out as teacher to gradually introduce the home credit work as part of the course in Home Economics.

The work with mature women is designed (from the standpoint of the student) to give more fully the idea of community and public service. As teachers in the public schools,—our critic teachers are really public

school teachers, and our student teachers likewise are public school teachers,—we are interested, not only in the children but in their mothers and in their homes. This gives a larger opportunity for securing interest in public health, proper sanitation, proper selection of food, proper preparation and serving of foods, economy, attention to health through proper ventilation, exercise and recreation, in fact, it gives the opportunity of carrying to the home what Mrs. Richards and others have developed as the Home Economics idea; that is, of making the Home Economics work comprehend the entire sphere of women's activities together with the realization of its possibilities in building better children, better men and women and better communities. In a way, this is undertaking too much for the field of Home Economics but instead of criticizing from this standpoint we rather recommend that in all subjects this same view be secured and that all work be looked upon as an opportunity for service in building up stronger, saner, and more healthful men and women and more sanitary communities. In fact, we believe that the time will come when our larger high schools will demand teachers who have this larger public service standpoint and that such teachers will also be selected in subjects other than Home Economics.

TERMINOLOGY AND THE SMITH-HUGHES BILL¹

HELEN KINNE

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In view of the fact that there is at this writing no accepted terminology in the field of Home Economics with reference to vocational education, it seems necessary to make as definite a statement as possible in regard to several phases of this subject.

The syllabus published by the American Home Economics Association gives a very complete classification of the many subjects included in this field as a whole. In the lower schools we can recognize several groupings or methods of treatment of selected topics dependent upon the aim in a given school.

¹ Presented at a preliminary meeting of the Committee of the N.S.P.I.E. on the Smith-Hughes Bill.

A. The study of certain topics related to the home, and also so closely to the life of each individual that they make for personal efficiency may be part of the general education of any girl, or boy even. This may appear either in the elementary or secondary school. It includes practice in the household arts and a study of related facts and principles. Whether it is called domestic science and domestic art, cooking and sewing, household arts, or domestic economy, the name does not particularly matter, except that a common name would make for a common understanding.

B. A treatment of the subject with a definite aim for the vocation of home-making; that is, the giving of training to the girl which will fit her for the management of a home. One difference between "B" and "A" is that in the case of "B" more time must be given, more phases of the subject covered, and in general the courses of study must be more intensive as well as extensive, this treatment makes the subject vocational, for homemaking is a pursuit or a vocation, and has economic value. It does not bring a wage to the worker, but while the woman at home is usually spoken of as a consumer, she is quite as emphatically a producer in that she produces home conditions either for good or ill. This phase may be given to some extent in either the elementary or secondary field, although, in the nature of things, its more effective development is in the latter.

Illustration of the difference between "A" and "B": An "A" course in foods *need* include nothing more for the girl than the study of nutritive values and methods of preparation. The "B" course in foods *must* include all the practical knowledge necessary for the housekeeper—food production, sanitation and cost, how to market, how to care for food in the home, nutritive values and menus, serving, and disposal of waste.

C. Here certain phases of Home Economics are given with the avowed purpose of wage earning. The vocation might be that of a dressmaker, costume designer, milliner, shopper, dietitian, tea room manager, lunchroom manager, assistant to any of these just mentioned, mother's helper or nurse maid, a general household worker or visiting aid. Still others are catering, the management of social affairs for the housekeeper, the selling of cooked foods. Some of the occupations are suitable for a girl of eighteen under proper conditions, and others are not. With any of them there must be knowledge of business methods, trade methods, and market conditions, with skill in the industry selected.

How much work of this type can be given to girls of secondary age it is impossible now to predict. The work selected for a given school must always depend upon the possibility of obtaining work after the training, and this varies in different communities. For example, in Cincinnati, girls trained in the high school do some of their field work while in the school by going out as seamstresses in the making of clothing for babies and children. In another community it might be possible for girls to assist in housework, but wherever this is tried it is found necessary to guard the girls most carefully. One student at Teachers College reported that in her own home town in a Western State, several high school girls taking domestic science helped in families.

One difficulty in this situation is the fact that in most schools "A" and "B" shade into each other, and that along with "A" and "B" there may be a little of "C." Nevertheless, these three methods of treatment are distinct from each other, or *may be made so*. It is perhaps unfortunate to call "A" "household arts." I can see that a course might be planned to be called a "personal efficiency course," the first part being taken by boys and girls together, to be differentiated later. Miss Alice Ravenhill, formerly of England, now living in British Columbia, called the "A" phase "hygiene," but this of course does not include the economic phase, which would be part of a personal efficiency course.

Now for my understanding of the point of view of the members of the Commission on Vocational Education: They intend the Smith-Hughes Bill to provide for the training of teachers for the "B" and "C" phases, but not for the "A," expecting the State to train its teachers for the "A" type.

A RESOLUTION PASSED FEBRUARY 25, 1916

The American Home Economics Association assembled in Detroit reaffirms its approval of Federal aid to vocational education as provided for by the Smith-Hughes Bill recommended by the President's Commission on National Aid to Vocational Education and now before Congress. The Association believes, however, that the ends to be served are so important and so diversified as to require a Federal Board, the members of which shall give their undivided attention to the administration of the act and shall be representative on the interests to be served.

STUDENTS' CONTRIBUTIONS

PASTRY

Miss Emma L. Taylor, Montana State College, '15, endeavored to determine the difference between plain paste made with cold water and that made with warm water. The question had arisen in another college. One student volunteered the statement that her mother always made excellent pastry with warm water.

In following out the problem weighed amounts of dry ingredients and a measured quantity of water were used. Thus the two crusts were identical in every way excepting in the temperature of the water used. With water at 35°C. or 97° F., or above, the pastry had a mealy feel in the mouth as compared to the paste made with cold water at 15°C. or 59° F. This was invariably the result in every experiment. The mealy feel was not undesirable, nor particularly noticeable, excepting when carefully compared with the cold water paste.

During the first part of the experiment it was found that the warm water paste was more tough and less flaky than the cold water paste. As more skill was gained in manipulation, this difference gradually disappeared. The two pastes were equally tender and flaky.

The conclusions drawn from the work are:

1. Good pastry may be made with warm water.
2. Warm water gives a paste with a mealy feel.
3. More time is required for manipulation when warm water is used.
4. More flour is required on the board when warm water is used.
5. When exposed to the atmosphere at room temperature the warm water paste absorbs moisture more readily than does cold water paste.
6. Cold water is more desirable than warm water for pastry.

THE COLLEGE GIRL'S WARDROBE

Miss Mae Myers, Montana State College, '15, worked out the following data on the minimum cost of a college girl's wardrobe for one year. All garments where the amount of material is listed are to be made at home. The prices, as listed, represent the prevailing prices during 1914-15, at Bozeman, Montana. They are representative of prices in this section of the West.

Girl's minimum wardrobe for one college year. All clothing made at home

NUMBER	ARTICLE	MATERIAL	YARDS	COST PER ARTICLE	YEARS TO WEAR	APPROXIMATE YEARLY COST
6	Undervests	Cotton gauze		\$0.08½	1	\$0.50
2	Corsets	Cotton		1.25	1	2.50
4	Drawers (knit)	Cotton		0.25	2	0.50
3	Union suits	Heavy cotton		1.00	2	1.50
4	Corset covers	Cambric	1½	0.20	1	0.80
2	Petticoats	Gingham	2½	0.45	2	0.45
1	Petticoat	Sateen		0.39	1	0.39
1	Petticoat	Muslin		0.50	1	0.50
1	Petticoat	Muslin		0.75	2	0.38
2	Nightgowns	Muslin		0.49	1	0.98
2	Nightgowns	Outing		0.80	2	0.80
6 pr.	Hosiery	Cotton		0.25	1	1.50
1 pr.	Hosiery	Silk (Phoenix)		0.75	1	0.75
1	Kimona	Cotton crepe	4½	0.80	2	0.40
1 pr.	Slippers	Felt		0.75	2	0.38
2 pr.	Shoes	.		3.50	1½	6.00
1 pr.	Shoes	Tennis		0.75	3	0.25
1 pr.	Slippers	Dancing		3.00	2	1.50
1 pr.	Low shoes			2.50	1	2.50
1 pr.	Rubbers			0.85	1	0.85
1	Skirt	Wool		8.00	3	2.67
1	Coat (winter)	Wool		30.00	3	10.00
1	Coat (light)	Wool		18.00	4	4.50
1	Coat (rain)			5.00	2	2.50
1	Sweater	Wool		5.00	4	1.25
2	Waists	Lingerie	4	0.75	1	1.50
2	Waists	Wool	4	1.50	3	1.00
1	Waist	Silk	3	3.50	2	1.75
1	Dress (blue)	Serge	4	6.00	3	2.00
1	Skirt (white)	Duck	3	0.75	2	0.38
1	Middy (white)	Duck		1.25	2	0.63
1	Dress (white)	Voile	5½	2.25	2	1.13
1	Dress (light)	Lawn	6	1.50	2	0.75
1	Dress (party)	Light silk	6	4.00	2	2.00
1	Hat (winter and fall)			6.00	2	3.00
1	Hat (spring)			5.00	2	2.50
1	Cap (winter)			0.65	3	0.22
1	Cap (rain)			0.65	3	0.22
1 pr.	Heavy gloves	Kid		1.25	1½	1.00
1 pr.	Long gloves	Silk		1.50	2	0.75
1 pr.	Short gloves	Cotton chamois		0.75	2	0.38
1	Muff	Plush		5.00	4	1.25
1	Riding Skirt	Khaki	8	2.25	2	1.13
	Accessories					
24	Handkerchiefs			0.05	1	2.00
	Pins, Belts, Ribbons,	etc.				3.00
Total.....					1	\$70.44

FOR THE HOMEMAKER

THE WOMAN OF TODAY

It is my opinion that no eighteenth century critic could emphasize more strongly the value of good housekeeping than does the woman of today, but this woman of today finds that she is needed in civic housekeeping, in national housekeeping.

The home is hers to rule and save by wisdom and grace, but the solidarity of life makes it necessary for her to save other homes with hers. Her care for her own children widens out with true knowledge of conditions and leads her into the care of all children.

Our ideal woman of today has the house-motherly instinct of the past, trained and disciplined, broadened in scope, deepened in power, penetrated with an even more enduring and subtle charm, and she brings this, not in a strident demand for rights, but as her contribution to the upbuilding of the nation's life.

MYRA REYNOLDS,
University of Chicago.

NOVELTY VERSUS QUALITY

CHARLOTTE GIBBS BAKER

With the revolutionary changes which have come about in the manufacture of materials there has come a change in the standards set by women buyers. When silks sold for much higher prices a silk dress was supposed to last for many seasons, often many years. It was not an uncommon thing in the early days of this country to bequeath a dress, just as one did a teaspoon or other valued possession; the heir perhaps prized the dress more than the spoon. Linens, spun and woven by hand, likewise were handed on from mother to daughter, as were the lovely soft homespun blankets and the much prized coverlets.

The days of hand spinning and weaving are past; silks, in fact all materials, have by modern processes been reduced in price and often at

the same time in quality. Few of our dresses would last to hand on to the next generation if we tried to keep them, and from a hygienic standpoint perhaps it is just as well that they will not. There are more fabrics on the market now from which to choose our wardrobes, and the prices of these permit a new gown more often than of old. New conditions have been created; we must not sigh for the old but study the new.

It is a well recognized fact that, in one way at least, women have met the new conditions, since they are quite willing to buy quantities of materials. When fashion says the old dress will no longer do, women willingly follow her dictates. Because it is well known that fashion will not be slow in dictating a change, women have come to be content with materials which they know will not wear long. The demand for variety requires new materials as well as new styles in dress.

The manufacturer, far from discouraging this demand on the part of women, does all he can to encourage it. Each season brings its quota of new names, new weaves, new finishes, new colors, new designs, new combinations of materials. Sometimes the name is attached to a very slight modification of a well known fabric; sometimes it represents an entirely new product of the designer's imagination. Often the new fabric is excellent, and finds its place among the standard materials which have stood the test of time. Sometimes, having no real merit, it is soon lost in oblivion.

A new fabric entails some risk upon the manufacturer, though he does not produce one until assured by the dictators of fashion that it will be encouraged, and his output is gauged by the advance orders of the buyers. A new material often means new machinery, perhaps new processes to be taught to the workmen, and different raw materials. The continued success of a novelty may be doubtful, and so the profit must come while the sale is good. The wholesale and the retail merchant also run some risk with the new material, and the first price must be sufficiently high to insure against loss if it does not continue to sell well. When a fabric has real merit aside from the fact that it is a novelty, the risk is less.

These conditions, together with the fact that women will pay well for a new thing, tend to make the prices high when a fabric first appears on the counters. This price is not necessarily proportionate to the quality of the material, its composition, or its wearing quality. Often a novelty sells for as much as, or more than, a standard material superior

in every way. Later in the season when it is no longer a novelty the fabric may appear on the bargain counter much reduced in price. Of course standard fabrics are also marked down at certain seasons, but the reduction is usually not so great.

It may be well to explain that "standard" fabrics mean those materials familiar to all buyers of clothing and house furnishings, which vary little from year to year, in which a certain price means a certain grade of fabric, and which may be found from season to season. Among these may be mentioned broadcloth, serge, velvet, satin, linen huck, crash, cambric, longcloth, gingham, and many others. These materials in some details vary from year to year yet keep their general characteristics, so that one is able to recognize an old friend. Compare with these a swiss, its design of paste only printed on; an attractive enough material at first sight but very disappointing when the dots come off in washing, or turn brown under the iron. This material, now no longer on the market, was certainly a novelty and a striking example of the extravagance of novelties.

Another novelty poor in value was a silk and cotton, largely cotton, imitation crepe de chine which came out last spring. The material was printed in colors following the vogue for figured crepe de chine. The general effect was very good and the material attractive and worth buying for a reasonable price. The early spring cost of the fabric was 98 cents, the price of a very fair grade of all silk crepe de chine, though at that time the figured ones cost more. A few weeks later, even before warm weather came, the cheaper fabric appeared in the windows for 67 cents a yard, a price much more commensurate with its value.

Frequently the poor grade novelty is an imitation of the higher priced and at the same time good quality novelty. In either case the price is usually high for the product obtained, but the wearing quality of the better grade is often proportionate to its greater cost. Novelties are perhaps most disappointing in wash materials, as the colors are likely to be fleeting, the fabric may not hold its shape, or may muss badly, or be otherwise unsatisfactory. Actual wearing quality is of course not the only requisite for a satisfactory fabric; it is quite as necessary that it retain its appearance. A material which depends for its appearance more upon the finish than upon the quality of the thread, weave, and dye, is likely to become shabby from wear.

The woman who would dress herself and family economically needs to consider carefully whether she will be tempted by things which have

not been tried out. More than one woman has remarked that she makes up her mind to try a novelty just about the time it goes out. This means that there are many styles she never tries. Is it a coincidence that it is usually a well dressed woman who makes this remark? It is the extreme which she avoids, but when a thing has been well tried she adopts it. Unless one has time and money to spend freely it is always safer to wait until the novelty is found to be meritorious and becomes a standard material worth purchasing.

The increase in the use of ready made garments has had its influence on the change of standards in fabrics. When one spends hours of hard work making a garment, or when one pays a good price to a dress-maker or tailor it seems worth while to buy a good material and to expect good wearing quality. When, on the other hand, one walks into a store and puts on a ready-made garment, at a price which seems remarkably low, it is not so surprising that the question of the quality is often neglected. The styles in ready made clothes are often extreme, and the workmanship not always of the best, and so it sometimes seems unnecessary to expect material that will wear long.

Such are some of the conditions as we find them today. They must be faced by every woman who buys and she must determine how it is best for her to buy. Shall she get good material, avoiding the extreme fad, and making quality her standard, or shall she buy the thing of the hour, economizing if she must on quality and discarding the garment more quickly? The answer to this will depend largely on one's standard of good dressing, though other factors will also influence it. The question of one's personality and one's needs must enter in, the consideration of the market in which one buys, one's skill in buying, and again the question of the expense of making the garment. Sometimes one must have a certain type of dress, as an evening dress, for a few occasions when the wear is not great; in such a case a good effect may be obtained for a moderate expense. On the other hand a street dress must stand the weather and hard wear, and so in this there is greater need for good material.

There are many very beautiful materials on the market today; if we could have a longer period for wearing our dresses more of us could afford these luxurious fabrics. Too often we have made quantity the standard, and as a result the quality has suffered.

In house furnishings there has been less tendency toward novelties, but judging from the exhibits of the last year, even here we are pressed

to follow fashion. It is to the interest of the manufacturer and of the interior decorator that we have changing styles in our houses, and if we allow they will so dictate.

Women who are making serious study of the problems of housemanagement, and the wise spending of the family income, need to consider well this question of standards, to balance carefully the value obtained and the money spent, and to know upon what properties they wish to place the emphasis.

RENNET CUSTARD—THE DISH THAT MAKES ITSELF

ELIZABETH DUBOIS BACHE

Secretary Washington, D. C., Home Economics Association

Rennet custard is a simple, dainty dessert, economical, nutritious and easily prepared. The custard is readily digested and so is especially fitted to the diet of those of weak digestion. It is made by the addition of a little junket or rennet to lukewarm, sweetened milk. It cannot be made with evaporated, dried, sterilized or malted milk, but can be made with either pasteurized or fresh milk.

The tablets are prepared from the calf's stomach and contain the digestive enzyme rennin which coagulates the curd of milk, a process similar to that taking place in the digestion of milk in the human stomach.

Until recently, most housekeepers have known little about the temperature that is necessary for making rennet custard and have guessed at the time with correspondingly varying results. In answer to inquiries among housewives, it is found that many do not know what rennet is and others have termed it "risky" to make. This is not so, if the general principles are understood.

The following table gives some general conclusions, formulated by many experiments.

Aim: (1) To determine the temperature and time limits for favorable action of rennet in making rennet custard. (2) To ascertain the effect on the action, (a) of increasing the amount used, (b) of putting in different shaped dishes. (3) To compare the action of the fresh with the stale tablet.

Limits for good action: Temperature—80° F. to 120° F. Time—4 minutes to 1 hour.

Recipe used as basis: 1 cupful of milk (pasteurized); 2 tablespoonfuls of sugar; $\frac{1}{2}$ rennet tablet (or 1 teaspoonful pepsin); 1 teaspoonful of cold water.

Comparison of temperatures and time

KIND	TEMPERATURE	TIME	GENERAL CONCLUSIONS
Hansen's, one-fourth tablet	98° F.	8 min.	This takes the same length of time to form in any deep dish, whether a bowl or custard cup. It takes longer in a shallow dish as it cools quickly.
Hansen's one-half tablet		4 min.	Doubling the amount of rennet used lessens the time, but makes a firmer, less delicate custard.
Hansen's fresh from laboratory		8 min.	Action of the tablet fresh from the laboratory is not any quicker than the store tablets.
Wyeth's one-fourth tablet		30 min.	This makes a custard of softer consistency, taking a longer time.
Wyeth's, one-half tablet		12 to 15 min.	Doubling the amount of this rennet lessens the time but does not seem to affect consistency.
Wyeth's fresh from laboratory		30 min.	Same as in case of Hansen's.
Wyeth's liquid rennet		6 min.	Liquid rennet acts a little more quickly than the tablets.
Fairchild's liquid pepsin		4 min.	
Hansen's, one-fourth tablet	95° F.	14 min.	The length of time gradually increases with the decrease in temperature.
	90° F.	14 min.	
	80° F.	60 min.	
	40° F.		There is no action. Action begins again when placed in a warm room, as the enzyme is not killed.
	110° F.	10 min.	As the temperature increases the action is gradually slower.
	115° F.	10 min.	
	120° F.	12 min.	About the highest temperature at which the action of the rennet is sure.
	130° F.	14 min.	This custard is of a soft consistency.
	140° F.	2 hrs.	This custard is very soft and the action is uncertain.
150° F.	Several hours		

SOME SUGGESTIONS FOR FLY CONTROL IN THE HOME

The great importance of beginning early in the spring to apply measures for reducing the number of flies in the home is evident when one remembers the rapidity with which the house fly breeds. The female lays about 120 eggs at one time and in fairly warm climates from ten to twelve generations of flies may be produced during one season. Every fly killed during the spring is worth hundreds killed later, since the progeny of one pair of flies surviving the winter may number several million by fall. Such measures as screening and swatting and the use of sticky fly papers, poisons, and fly traps are well known and prove effective in reducing the number of flies in the home, but it has been shown conclusively within the past few years that the most effective means of controlling flies is to prevent their breeding by eliminating the breeding places. From early spring until late fall every housekeeper should make great efforts to prevent the breeding of flies about her home and grounds. In many cities and towns this matter is looked after as far as possible by the local health officers but the housekeeper can and should coöperate with them in looking after her own premises and in calling to the attention of the authorities any serious neglect of duty on the part of neighbors, for the good resulting from the efforts of one person may be undone by the presence of fly breeding nuisances in the neighborhood.

The chief breeding places of the house fly are in manure, especially horse manure, in which the females lay their eggs by preference, apparently, and in other forms of decaying organic matter. The larva or maggot which issues from the egg develops, within a few days, into the pupa, previous to which the maggot migrates to the edge of the manure pile or burrows into the ground. The adult fly emerges from the pupa in from eight to twelve days after the eggs are laid.

To prevent fly breeding in stables, they must be kept clean and free from manure, damp straw and other decaying organic material. The floors should be tight so that the larvae cannot burrow into the ground, there to develop into flies. The manure should be kept in a fly-proof bin and tightly covered; in towns and cities it should be removed at least twice a week during the summer and once a week during the winter. Many cities and towns have ordinances which require that stables and manure shall be so kept that they will not be nuisances. With proper care and coöperation with the authorities on the part of

stable owners, it should be possible to reduce greatly the number of flies in cities. In the country the prevention of fly breeding is more difficult, since, as a rule, the manure must be kept on the place and used as fertilizer. There are, however, two practical methods of handling manure which do not injure its fertilizing value and which at the same time keep it from becoming a place for fly breeding.

One method is the use of a maggot trap. In this, the manure is placed on a slatted platform which stands on the floor of a concrete basin containing about one inch of water. The manure is kept moist either with water or liquid wastes from the stable and under these conditions the maggots in migrating to find a place to pupate fall into the water and are drowned. Experiments have shown that this device destroys about 99 per cent of all the maggots in the manure. The construction and operation of this maggot trap is described in detail in a bulletin of the Department of Agriculture.¹ A similar form of trap has been devised by the Richmond (Va.), Health Department. This consists of a barrel with holes bored in the bottom or fitted with a bottom of stout wire netting; the barrel is placed on bricks in a tub containing a few inches of water.

Another method is to treat the manure with chemicals. Experiments carried out in the Department of Agriculture have shown that a solution of one-half pound of hellebore in 10 gallons of water applied to 8 bushels of manure will kill from 85 to 98 per cent of the maggots breeding in manure and has no deleterious effects on the manure itself. A solution of one pound of powdered borax in 12 gallons of water and applied to every 12 bushels of manure will kill from 90 to 99 per cent of the maggots. This is less satisfactory in some ways than hellebore. Borax is also effective in treatment of stable floors and similar places to prevent fly breeding.

Since flies breed in other kinds of manure than horse manure and in such material as garbage, rotting vegetables, or any decaying organic matter, which is undergoing fermentation, all such material should be destroyed or so treated as to prevent the breeding of flies. Yards should be kept clean; garbage should be stored in tightly covered cans and the contents of privies should be treated with borax and also tightly screened. By such methods, the breeding of flies is prevented and the number will be further reduced through starvation.

¹ U. S. Dept. Agr. Bul. 200 (1915), pp. 15.

In addition to the prevention of fly breeding, efforts must also be made to keep flies from the house. All windows should be tightly screened, preferably with wire netting covering the whole opening, but even cloth netting tacked over the windows will do if no better substitute can be had. Outside doorways should have tightly fitting screen doors, opening outward with self-closing devices if necessary. Flies gaining access to the house should be killed by "swatting" or other measures. The use of fly paper is effective for this purpose. Commercial paper can be bought or a home-made substitute can be prepared by heating, until dissolved, 2 pounds of rosin in a pint of castor oil and then applying it to sheets of paper with a brush. Fly poisons are also effective. A solution of one teaspoonful of commercial formalin (40 per cent strength) in one cup of milk or water may be exposed in shallow dishes; preferably no other liquid should be accessible to the flies. This solution is not poisonous to man and is safer than fly poisons containing arsenic; it should, however, be put out of the reach of children. Pyrethrum powder may be burned in the rooms to kill the flies. Insect powder blown into the air is said to stun flies so that they may be swept up and then destroyed. Fly traps are also effective especially around kitchen doors and near stables, outhouses, etc. There are a number of traps on the market which are said to be very satisfactory.

The danger of the housefly as a carrier of disease is too well known to need emphasis on the importance of fly preventive measures in conserving health. By effectively applying the methods described above it should be possible to reduce greatly the number of flies around any home even though they cannot be eliminated entirely.

THE COUNTY AGENT AND THE HOME

Every one is beginning to realize that the great education movement that is fostered by government and state aid and of which county agent activities are a part, is of the greatest advantage to the home. Requests for aid in studying and solving home problems are beginning to receive as general a response as is given to the problems of the farm.

The Department of Agriculture has lately in a circular of information told us that nearly 400 women county agents are now at work in

the 15 Southern States. These agents assist the farm women in their territory in much the same way that their men colleagues assist the farmers.

At first these women devoted themselves largely to the formation and supervision of canning clubs. Now, however, much of their time is spent in home demonstration work with the mothers as well as with the girls. The opportunities that this field offers are illustrated by the recent meetings of a Virginia home demonstration club. The club was organized in June, with 12 members, which grew almost at once to a membership of 25. So many applications for membership came in that it has been necessary to form other clubs so that each organization may not be too large to do efficient work.

The construction of a homemade fireless cooker at a cost of 25 cents, with its saving of labor, time, and fuel, suggested other devices that were worked out by the women themselves.

Among these were the "scrubbing chariot," consisting of a comfortable padded frame mounted on four flat rollers, and enabling the housewife to save many steps in wiping and scrubbing floors and cleaning woodwork. It was made at a cost of 47 cents.

A companion convenience to the fireless cooker was the milk cooler or iceless refrigerator, which was constructed in general in accordance with the directions furnished by the department. The homemade shower bath, the roller tray wagon for use in carrying dishes from the kitchen to the dining table, and a folding ironing board and cover were among the other improvements suggested or developed.

The interest taken by the women in this kind of work is indicated by the fact that the county agents have now enrolled approximately 6000 farm women as home demonstrators. These demonstrators agree to adopt some household improvement and to furnish in this way an object lesson to their neighbors, or they agree to carry on certain demonstrations under the supervision of the county agents. Some very successful demonstrations have been made in cooking, in improving sanitary conditions, in winter gardening, in poultry work, and in home dairying. In addition, they agree to report to the county agents at the end of the year the results which they have obtained.

These practical object lessons are most efficient ways of arousing interest and carrying conviction. A Georgia woman, for example, who had been shown the use of the milk separator, and better methods of butter making, wrote recently that some of her neighbors came for

miles to see her churn. The fact, she said, that she was getting 30 cents a pound for her butter instead of 20 cents had done a great deal in making her neighbors want to learn to make better butter. The use of the thermometer, in particular, attracted their attention. Before seeing it in operation they had not considered the importance of having the cream at the right temperature. Incidentally, this woman wrote that her husband was taking much interest in the work and was planning how to fix the barn and feed room in order to aid his wife in her butter making.

This work has been in existence for about five years. It began with the organization of girls' canning clubs in two states in 1910. These girls' clubs, however, while important in themselves, were from another standpoint regarded as a stepping stone to further home demonstration work for the farm women. At the beginning of the movement one of the founders wrote:

The direct object is to teach some one simple straightforward lesson to the girls on the farm which will open the way to their confidence and that of their mothers, and which will, at the same time, open their eyes to the possibilities of adding to the family income through simple work in and about the home.

THE RIPENING OF CREAM

By the ripening of cream is meant the changes it undergoes from the time of separation until it is added to the churn. Upon these changes depends very largely the quality of butter as regards texture and flavor. The temperature at which cream is held determines the firmness or texture, while the flavor is dependent upon the by-products from the bacterial growth.

The purpose of ripening cream is fundamentally that of giving the butter the desired flavor and aroma, but in addition it increases the ease and efficiency of churning. Cream is ripened in one of two ways:

First, it sours or ripens as a result of the action of bacteria which are normally present in milk and cream; or, second, it ripens as a result of action of certain kinds of bacteria which are added in what is termed a "starter."

HOUSEHOLD MEASUREMENTS

The United States Government does not overlook the homemaker and her problems. We need sometimes to recall the varied work of the Department of Agriculture for the improvement and regulation of our food supply as well as the specific studies in its Office of Home Economics of the use in the home of agricultural products for food, clothing, and household equipment. The Department of the Interior through its Bureau of Education, and the Treasury Department through its Public Health Service are studying questions and sending out literature on subjects that concern the home. The Children's Bureau of the Department of Labor, has made itself widely known by its extended work for the welfare and the care and management of the child.

The introduction of new foods, the devising of methods for utilization of food that now goes to waste, and the issuing of bulletins also form part of the activities of the Department of Commerce.

One of the most helpful of these bulletins is the circular of the Bureau of Standards called "Measurements for the Household" that may be obtained from the Superintendent of Documents for 45 cents. This was issued August, 1915, and a revised edition is already in preparation. The Bureau offers to answer any questions on the subject of the circular and welcomes any suggestions for the new edition. Some of the topics included are the measurement of commodities; heat and its measure; electricity and gas with a description of the meters; some of the apparatus less often used in the household such as hydrometers; and many instructions for better use of these measuring appliances, with further information that will help in administering a household. The practical suggestions vary from the setting and regulating a clock, the determining the coldest place in the refrigerator, and the various uses of different kinds of thermometers, the purchase not only of food, but of coal and other fuels, to a description of deceptive methods of unscrupulous dealers and ways to control them.

One chapter discusses kitchen measures and standardizes them, giving at the same time the various measures of capacity, including the metric system.

The comparison of household processes with those of modern industry is made with this statement: "Modern industry owes its efficiency largely to careful measurements which control processes or fix the dimensions, proportions and properties of products. Measurement guides the processes of all industries and keeps their output up to certain standards."

EDITORIAL

Some Guides for Feminine Energy. A notable address was delivered by Dean Gildersleeve of Barnard¹ before the New York Delta of the Phi Beta Kappa Society, on the twenty-fifth anniversary of the founding of Barnard College. Like that delivered by Miss Lathrop at the recent semi-centennial at Vassar, this offers hope that order may soon appear out of the chaos of recent ideas regarding women and their place in present day society. Miss Gildersleeve traces the changes which have gradually been releasing a large store of women's energy from the tasks of homemaking and points out that this surplus energy must find some useful and honorable means of expression. It is because of the lack of such outlet that so much feminine energy has lately been running to waste in restless and somewhat misdirected activities.

Such recent organizations as the Intercollegiate Bureau of Occupations and the League for Business Opportunities for Women represent concerted effort to study the conditions in occupations suitable for trained women, and to guide those seeking employment into positions which will bring to the community the full value of each worker's training and ability. In the belief of the speaker much of this newly released energy will go into newly developed occupations, especially those which, in a large sense, call for the "instinct for preserving life," social service, homemaking on a public scale, legal work in connection with social betterment movements, and others. Soon, too, we may hope that means will be found not only for utilizing the energy of the woman who does not marry, but also for giving society the benefit of married women during the years when their children do not need their entire attention. As Dean Gildersleeve says in closing, the wonder is not that the "new woman" should occasionally appear "an intruding, abnormal, vociferous and rather dangerous creature," but rather that we are so rapidly succeeding in directing her energies into helpful and honorable fields, and in working out "amid new and rather perplexing conditions, a situation in which happiness may best prosper, and the old kindly human affections find full and free play."

¹ Some Guides for Feminine Energy. Virginia C. Gildersleeve, *Columbia University Quarterly*, 17 (1915), no. 4, pp. 363-375.

Some Comments on the "Woman's Movement." In a similar way Mr. Walter Lippman in his "Drift and Mastery" calls attention in his chapter on The Woman's Movement, to the fact of "the absolute necessity for a readjusting of woman's position." He says "Housekeeping and baby-rearing are the two most primitive arts in the whole world. They are almost the last occupations in which rule of thumb and old wives' tales have resisted the application of scientific method. They are so immemorably backward, that nine people out of ten hardly conceive the possibility of improving upon them. They are so backward that we have developed a maudlin sentimentality about them, have associated family life and the joy in childhood with all the stupidity and wasted labor of the inefficient home."

He questions whether in the readjustment women should be urged to go into industry as it exists today believing that "the army of women in industry is not a blessing, but the curse of a badly organized society," and that "for the great mass, women's work in the future will be in the application of the arts and sciences to a deepened and more extensively organized home."

He explains that this does not mean a narrowing of her opportunities or even that women need not concern themselves with industry; it means that they must develop an intelligent consumer's control, that they must get into politics, since the home in a hundred ways touches upon all its ramifications. They must deal with the school and with education in all its phases.

It also means coöperative organization, division of labor and specialization in the home.

He says, "To be paid for work in money is possible only when you don't do all the work. So the moment you divide the work the only way you can share the product is by paying money to each other. A woman who does her own cooking gets no pay. A woman who does someone else's cooking gets pay. And when women introduce into the work of the home the principle of division of labor and coöperative organization, they also will receive pay, and what is called 'economic independence' will be open to them."

He adds, "It is curious how little faith conservatives have in the institution of the family. They will tell you how deep it is in the needs of mankind, and they will turn around and act as if the home were so fragile that collapse would follow the first whiff of criticism."

"We do almost no single, sensible, and deliberate thing to make

family life a success. And still the family survives. It has survived all manner of stupidity. It will survive the application of intelligence."

However we may disagree with Mr. Lippman, particularly in regard to his attitude toward women in industry, we shall all be willing to acknowledge that we are still "in medias res," and that our traditions are failing to guide us out of the maze in which we find ourselves.

We need creative thinkers. We need open minds. We need courage—and we need most of all an atmosphere in the home that shall imbue the child with true democracy.

To this readjustment of woman and the home to modern conditions the American Home Economics Association should contribute something more than indefinite suggestions.

It should give the concrete help of proved methods; it should venture to formulate new traditions; it should blaze the trail toward a new understanding and a new outlook.

We have followed long enough. Let us lead.

COMMENT AND DISCUSSION

COOKERY UNIFORMS IN ELEMENTARY SCHOOLS

To extend into the realm of schools lower than college and normal, your recent discussion of uniforms in the cookery laboratory, it will be interesting to know how Dartmouth, Mass., handled her problem.

Believing that a uniform is an absolute necessity in a cookery laboratory, first, because it is a sanitary covering over a possibly undesirable dress; second, because the general appearance of a class is much more workmanlike and therefore grading more equably determined, we started making equipment in the sewing classes in Grade V in the following order: hand towel, holder, circular cap and high-neck, long-sleeve apron.

We used for the apron and holder a ladies' cloth at twelve cents per yard which has a desirable firmness yet not undue weight. For the towels we were able to get remnants of Russia crash at eight cents per yard, and for the caps dotted muslin at twelve cents was dainty and effective. Each girl paid fifty cents for material and successfully accomplished the making of these articles with the previous year's experience in

Grade IV work, so that on entering the sixth grade cookery course she was neatly equipped and in readiness for work.

Seven minutes is sufficient time for the pupils to remove their wraps, don their uniforms conveyed in small suitcases, and appear in the laboratory, ready to pass in review on their way to the hand-bowls. The teacher inspects the appearance and detects any apron not freshly laundered, any holder or towel missing or a loop from either, a button gone, a stray lock escaping from beneath the cap, or carelessly groomed hands.

It will be seen from the requirements that the uniform is to be freshly laundered after each lesson of two hours and a half once in two weeks, and that caps are worn to cover all the hair that if braided may be coiled about the head before the cap is put on.

At the beginning of the second year the course was extended through grades seven to nine. The cap of the first year high school girls, to distinguish them from the elementary grades, was a simple Dutch cap, capable of being drawn closely around the face.

The simplicity, yet effectiveness of the uniform commends it.

ALICE HOWLAND MACOMBER,
Supervisor Domestic Science, Dartmouth, Mass.

For lack of space we cannot publish the patterns and photographs that accompanied this article, but we shall be glad, with Miss Macomber's permission, to send the cuts to anyone who desires to obtain them.—THE EDITOR.

ANNOUNCEMENT

The JOURNAL OF HOME ECONOMICS, with the consent of the Council, has been selected as the official organ of the Home Economics Section of the Central Association of Science and Mathematics Teachers.

The announcements of that Association will in the future appear in the JOURNAL, while the chairman of the section has agreed to furnish to the JOURNAL a certain number of articles especially for high school teachers.

The JOURNAL on its part, while not neglecting other phases of the work, is planning to consider more definitely than ever before the interests of the secondary school and welcomes to its constituency this body of high school teachers.

May this coöperation be of value both to the Central Association and to the American Home Economics Association.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

School Credit for Home Work. By L. R. ALDERMAN. Boston: Houghton Mifflin Company, 1915, pp. 181. \$1. By mail of the Journal, \$1.07.

The idea of establishing habits of home-making is by no means new. The pedagogical view, however, that the school should give credit for industrial work performed at home is by no means widespread. The educational value of such things as the following has been inadequately estimated: helping with the supper, the kitchen work, putting a bedroom in order, milking a cow, making butter, feeding the pigs, mowing the lawn, blackening the stove, preparing smaller children for school, building furnace fires, taking care of plants and flowers, ironing clothes, mending, making bread, building fires and splitting wood.

Mr. Alderman's book is divided into two parts, the first of which is somewhat emotional and persuasive in character. He illustrates in various stories the methods by which some teachers may succeed in revealing "hidden springs of useful interest" and utilize these springs to nourish correct habit building and character formation. Part two is devoted to the reproduction of various charts illustrative of different plans for giving school credit in elementary schools and high schools. While most of the charts represent departures from traditional education and are best adapted for schools in rural communities, there is a wealth of suggestion for the adaptation of the plan to urban schools. The lists of subjects to be credited at school though practically studied at home cover the fields of agriculture, domestic arts and manual training.

The author has done his work in an appealing way and has presented a very delightful and instructive method of securing closer cooperation between the school and the home.

Child Training. By V. M. HILLYER. New York: The Century Company, 1915, pp. 287. \$1.60.

Coming at a time when military discipline is a matter of great public moment, Mr. V. M. Hillyer's book on *Child Training*, with its strong insistence on Habit Drills, Prompt Obedience and Self Control, strikes an interesting note. Though Mr. Hillyer's aim is that of all experts in *Child Training*, namely, the early stimulation and training of all those phases of life which will make for the highest adult development and efficiency, the methods he uses swing far from those of some of his contemporaries. Mr. Hillyer avoids sentimentality. His method is simple, practical, direct; and characterized by a certain manly saneness that compels admiration.

Child Training is written for parents and teachers of children under the school age and sets forth a course of training surprisingly varied in its scope, opening as it does so many avenues commonly considered closed for children so young. The book serves essentially as a practical guide rather than as an inspiration to proper child training, and the success of its aim depends more on the proper administration of its comprehensive curriculum than to the attitude of mind it engenders in the teacher. In this respect Mr. Hillyer shows himself primarily a pedagogue rather than a reformer. He makes no attempt to win one to his views, there is no proselyting

in his pages. He simply states his method with briefness and sincerity, and a perfect confidence in its success; a confidence greatly strengthened doubtless by the memory of many years as the successful head of the Calvert School of Baltimore.

Modern Industry in Relation to the Family, Health, Education, Morality. By FLORENCE KELLEY. New York: Longmans, Green and Company, 1914, pp. 147. \$1. By mail of the Journal, \$1.10.

In 1907 Mrs. Kelley, writing about "Unskilled Mothers" in the *Century Magazine*, said: "It often seems that of the baby's three enemies, milkman, landlord and unskilled mother, the unskilled mother is the deadliest, because her opportunity for doing him harm is continuous and her means of attack are so varied." Seventeen years later Mrs. Kelley writes in *Modern Industry*: "After living more than twenty years in working class districts I am impressed with the deadly effects, in working class families, of two active continuing influences; the bad food supply and the ignorant mothers in relation to that supply." Mrs. Kelley's written and spoken words are like a steady incessant hammering against a rock of habit, ignorance and indifference.

In the chapter on the family Mrs. Kelley says, with that momentary discouragement that must at times come to the leader of a great cause: "Only little groups of reformers apply little remedies, and the continuance of the evil witnesses our failure. . . . Our reformers discuss houses as though they were balloons, or biplanes, or clouds floating aloft, unrelated to the land on which they stand, unaffected by taxation," and then Mrs. Kelley proceeds to give the relationship. To her mind facts are clear and convincing; she never forgets the connection between the tenement, the mothers, the sick baby, the dirty milk and the city and the State laws. But before Mrs. Kelley leaves the "family" she gives us the brighter side: "The era of unbridled power exercised by irresponsible industry at the cost of the family (the fundamental

institution of the human race) is slowly drawing to a close."

Mrs. Kelley never speaks in generalities, and she is never afraid. In the chapter on health she gives a vivid picture of the candy industry. One can almost see the room where the fine chocolate bon-bons are made, "a cool refreshing temperature, filled with pure air," and one can feel her indignation as she tells us that this is "not for the sake of the workers but for the candy." One is conscious of Mrs. Kelley's never ceasing fight for the children, in her descriptions of that candy which she calls "poisonous trash which mission Sunday Schools buy for their Christmas trees."

"Far more would have been gained," she writes in the chapter on health, "if the energy spent in strikes for shorter working hours had all been directed toward enacting and enforcing statutes." Again and again she cries out "We struggle by petty retail measures. . . . Industry produces disease by wholesale." "Never was a nation so rich as we are; yet we are confronted by chronic, wholesale poverty, inextricably associated with gross ignorance."

Mrs. Kelley always sees the truth; not what men call the truth. "Thou shalt not kill" means to her just what it says. "An individual murderer of an individual person pays with his life for his crime, but owners of tenement houses do not count themselves infanticides though the death rate of babies in tenements is twice as large as elsewhere. . . . Builders, managers, stock and bond holders of factories are not punished as murderers, though a hundred and more men and women perish by fire and smoke in a single work room. . . . The human mind accepts without revolt that to which it is accustomed from childhood. Cannibals were not horrified at eating their grandmothers; soldiers plan murder systematically years in advance."

In the last chapter, *Morality in Connection with Industry*, we are once more given the more hopeful view. Whether or not we are aware of it, whether we like it or not, we are living in the initial stages of the

change from work done almost universally for private gain, to work in the service of all."

Home Making and Home Keeping: A Text-book on Home Economics. By GRACE J. FERGUSON. San Juan, Porto Rico: Department of Education, 1915, pp. 278.

This book is stated to be a text-book for the first two years' work in Home Economics in the Public Schools of Porto Rico. It embraces instruction in cooking and sewing, and deals with the subjects in a simple form.

The instructions throughout emphasize the use of home-grown fruits and vegetables, and at the season of the cheapest cost; also wherever practicable, the use of home made apparatus, as the oven made of an oil can. As the importation into the islands of many things is expensive, it is important that one use the article at hand, rather than wait for an expensive one which perhaps may never be obtained.

The same standards cannot be set for young students or a primitive people as for those more advanced, and this fact may account for the lack of freedom allowed in the choice of subjects, which are very definitely outlined.

The lessons follow in sequential order, and if rightly presented ought to make a valuable course for the students. The illustrations used are fairly well done. It is regrettable that the English used in the book was not more carefully supervised.

Five Playlets. By HESTER DONALDSON JENKINS, Ph.D. Brooklyn: P. J. Collison and Company, 1915, pp. 39. \$0.25.

As the introduction to this pamphlet states, it is written in accordance with the present vogue of such playlets as "a channel of education" that should be adopted throughout the country. The five little plays, prepared for the Department of Social Betterment, Brooklyn Bureau of Charities, are written so that they can be presented by children or adults without much scenery or costuming. Their titles suggest the phases of social betterment work which they

are intended to foster: "Mother Goose Up-to-date," a health playlet; "Judith and Ariel," a fresh air playlet; "Our Friends the Foods," a food playlet; "In a Tenement," a tenement playlet; and "Killing Giants," a juvenile court playlet.

Perhaps "Our Friends the Foods" bids fair to be the most amusing. A mother gives a party for her boy and girl to which she invites Soup, Meat, Milk, Eggs, Bread, Cereal, Fruit, Vegetables, Pickles, Candy, while Tea, Coffee, Beer, Whiskey, and the ubiquitous Chewing Gum come uninvited. The various foods justify their appearance in rhyming speeches. Needless to say, Tea and Coffee are not allowed to remain and Beer and Whiskey are forced to take an even more ignominious departure, in spite of the wistful looks which the boy casts after them. In the dance which closes the play, all of the characters pair off except Chewing Gum; he is left to look on because he is "harmless but not good enough to dance at a party." There are those of us who feel that a noble opportunity has here been neglected; he really ought to have been driven off as summarily as the disgraced beverages because his manners are quite impossible in any decent society.

Efficiency in the Household. By THETTA QUAY FRANKS. Garden City, N. Y.: Doubleday, Page and Company, 1915.

Mrs. Franks has adopted the plan laid out by Mrs. Richards long ago, a menu for three weeks, which with slight changes is suitable for the year round. These menus may be adapted to the author's needs, but they lack originality and offer little of value to others. It is a question whether each housekeeper may not better devise her own menus, suiting them to the numbers and physical condition of those she has to feed, than to depend upon any detailed plan like this. In general the bills of fare are intended for families of limited income and for use for household employees in more "complex" households, but they seem to have no scientific basis and to the reviewer seem unattractive for the amount of money expended.

Incidentally, one wonders whether an expenditure of \$14.36 for meat, fish, eggs and bacon out of a total of \$26.56 for food for the week makes a proper proportionment, and whether one-half pound of coffee per day is not a generous allowance for six people.

A very brief preface is all that justifies the title, for the book is wholly made up of menus, lists of foods available each month, and blank spaces for records of further bills of fare and for household expenses.

The Treasure. By KATHLEEN NORRIS. New York: The Macmillan Company, 1914, pp. 186. \$1. By mail of the Journal, \$1.08.

An interesting story based on the familiar "servant problem." Mrs. Salisbury has struggled more or less ineffectually for many years with the problem of finding a competent maid to do for a moderate wage the housework for a family of five. Finally, worn out with her efforts to manage the household with the help of a slovenly maid through a hot summer, she has a nervous breakdown. Her husband and her pretty "modern" nineteen-year old daughter "Sandy" take the reins in their hands and engage as maid for the Salisbury family a graduate of the American School of Domestic Science, an endowed school where young women are given a three or four-year course training them for housework. The story is an account of the way in which "the treasure" performed her duties and of the readjustments necessary between mistress and maid.

The novel, while offering no complete solution of the servant problem, is in several ways distinctly suggestive. It places a valuable emphasis upon the necessity of putting housework upon a plane with other kinds of dignified employment for young women; of systematizing the work of the household; of doing away with that feeling of class distinction which a certain type of woman wishes to exist between herself and her maid. It is also decidedly interesting in its insistence upon the practicability of a definite course of training planned to fit

women to do housework, as a vocation, and of the advantages to many housewives of turning over this work to persons so trained.

Wanted: A Young Woman to Do Housework. By C. HELENE BARKER. New York: Moffat, Yard and Company, 1915, pp. 127. \$1.00. By mail of the Journal \$1.06.

"Under the present system of housekeeping there is not one day out of 365 that the domestic employee has a right to claim as a day of rest, not even a legal holiday."

Even the most conservative housekeeper will be startled at this statement and also perhaps at the following: "The fact is that housework has remained stationary while other work has gained in freedom and dignity."

The writer of these words has undertaken in her little book to prove that it is possible to give to the domestic employee the conditions that she finds attractive in the factory and other places of work, and that this simple change to definite short hours of work and one day of the week entirely free will put housework on a dignified level and attract a far better class of women than are now available.

As proof she cites the experience of a city woman who advertised as follows: "Wanted, A young woman to help with housework, 8 hours a day, 6 days a week, sleep home. Apply by letter only."

Within 24 hours she had received 105 applications, and whenever this advertisement has been used from 100 to 160 answers have been received.

The housekeeper, knowing what qualifications are necessary to meet her special needs, will select accordingly; one woman who did much entertaining required a good cook and waitress and arranged that her hours on duty should be 12 m. to 3 p.m. and from 4 p.m. to 9 p.m. The employer in this case prepared the breakfast.

A number of schedules are given to show that the work may be arranged with the help of the employer or of a woman by the day whose presence on the maid's day off makes

all run smoothly. The schedules for two or three employees are of course easily adjusted. But in all cases the employees are expected to have a tolerable efficiency in all kinds of work.

The advantages urged for the system are:

1. The superior willingness and intelligence

of the worker that can be obtained under these conditions; 2. A saving of money, since the employee sleeps at home and takes one or two of her meals there. Such an experiment it would seem could best be undertaken by a small group of friends whose scale of living was somewhat similar.

BOOKS RECEIVED

- The Baby's First Two Years.* By Richard M. Smith. Boston: Houghton, Mifflin Company, 1915, pp. 156. \$0.75. By mail of the Journal, \$0.80.
- The Best Private Schools of the United States and Canada.* By Porter E. Sargent. Boston: Porter E. Sargent, 1915, pp. 514 (An annual publication). \$2.00 cloth; \$3.00 leather.
- Boynhood and Lawlessness.* By Eleanor H. Adler. New York: Survey Associates 1914, pp. 215. (Russell Sage Foundation, v. 2 of West Side Studies carried on under the direction of Pauline Goldmark.)
- Changes in the Food Supply and Their Relation to Nutrition.* By Lafayette B. Mendel. New Haven: Yale University Press, 1916, pp. 61. \$0.50. By mail of the Journal, \$0.53.
- Dollar Luncheons to Serve four People.* By A.C.K., D.S.A., E.S.R., & L.B.C. Springfield, Mass.: A.M. Rowley, 1914. \$0.25.
- Efficiency in Home-making and First-Aid to Good Cooking.* By Georgie Robertson, Washington, D. C., 1915, pp. 157 + viii. \$1.00.
- Learning to Earn.* By John A. Lapp and Carl H. Mote. Indianapolis, Bobbs-Merrill Company, 1915, pp. 421. \$1.50. By mail of the Journal, \$1.58.
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PAMPHLETS RECEIVED

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EXCHANGES

HOMEMAKING FOR BOYS

Much is being said and written nowadays about courses in home-making for girls, but all is silence with reference to the part the boys must eventually play in that important institution. To be sure, boys are being educated along the lines of money getting and money spending, but not much information can they get from the schools that will fit them to participate properly in home activities and the real essence of home life.

The notion has been entirely too prevalent that the man is simply the provider—the furnisher of the wherewithal, with no other real function in the home. Could courses be gradually and judiciously offered which would help to overcome this notion? There certainly needs to be developed in the boys the homing habit; for the lack of it is what ruins many a boy and runs many a matrimonial launch aground.

It may be that such a course as suggested would not appeal to the boys. They may regard it too effeminate. If so, may not this only argue the greater need of it? It may be that some wise and sane people can discreetly and with dignity and good sense work into certain of their courses for boys such practical considerations as home duties and responsibilities, home economy and accounting, home relations and government, home building and furnishing, the sanctity of home ties, man's place in the modern home. Thus may there come to the word *homely* its better and finer meaning.

Whether or not the schools can properly do anything along this line, the fact remains that there is pressing need of just such information and training somewhere.—*Industrial Arts Magazine*.

NATURAL STORAGE

Experiments have shown that in many of the large caves so numerous in Kentucky the atmosphere is so dry and the temperature so even throughout the year that citrus fruits stored in them remain in perfect condition for many months. Lemons have been kept in one of these caves for two years without losing any of their freshness. Associations of fruit growers in states farther south have concluded after careful experimentation, that through this method of storage these fruits can be held long enough to insure stable market prices.—*The Independent*.

NEWS FROM THE FIELD

The Detroit Meeting. The American Home Economics Association this year for the first time arranged a meeting in connection with that of the Department of Superintendence of the National Education Association, held at Detroit, February 19-26.

This is from many standpoints the most important educational meeting of the year and offers an unusual opportunity to further the interests of Home Economics.

This first experiment proved so successful that it seemed the universal opinion that it should be repeated each year.

The Association held two sessions, as well as a meeting of the Council and of the Executive and Finance Committees.

Perhaps it was chiefly due to the activities of the Detroit Association that approximately three hundred people were present at each session. Certainly it was true that much of our enjoyment was due to their courtesy and hospitality.

The President of the Association, Miss Van Rensselaer, was suffering from a severe cold and had lost her voice, so that Miss Marlatt, the Second Vice-President, served most acceptably as the acting presiding officer, though the guiding hand of the President was felt throughout the meeting.

Dean Talbot, the First Vice-President, was also on the platform in the afternoon and presided during Miss Marlatt's speech. The program was presented practically as announced. Miss Kinne was not able to be present but some additional speakers took her place. Mr. Dodd, Secretary of the National Society for Promotion of Industrial Education, gave a report of the present status of the Smith-Hughes bill and asked and was granted a further indorsement of the bill by the Association.

Mrs. Burr ridge, of Vermont, came to us from the section of the State Supervisors of

Rural Schools that unfortunately had its Household Arts program at the same time as our morning session. Mrs. Burr ridge presented some of the problems of the rural school under New England conditions, differing widely from those of the West.

The morning session was opened by Professor Works, in charge of the Rural Agricultural Section with whom we were in joint session in the morning, who asked and answered the questions: Have we enough body of material to justify our work? Do we know what should be taught, or how? What is the social need of this work? He emphasized the need of more time.

Miss Berry of the University of Minnesota discussed the noonday lunch problem as a feeding problem, an educational question and a management problem. Her paper was so suggestive and helpful that we are hoping she will be persuaded to allow us to publish it in the JOURNAL.

President Ednah Rich, of the Santa Barbara Normal School of Manual Arts and Home Economics, discussed the "home visitor," outlining the history of this work and showing how it has been developed in California.

The interests of the JOURNAL were presented by the Editor and her request for suggestions have already met with the response of several letters.

The afternoon session opened with a report of the work in the Detroit schools presented by Miss Charlotte Keene, a Detroit teacher, that gave an insight into the methods in use in a great public school system.

Dean Talbot's few words introducing Miss Marlatt made us realize the great growth of our movement and Miss Marlatt herself showed how much thought has been put upon the solution of our problems. Her

paper roused a vigorous discussion that continued as long as time allowed.

Miss Bevier, of the University of Illinois, as always, gave a most suggestive paper, some of which we hope to repeat in the JOURNAL.

Miss Florence E. Ward, Office of Extension Work North and West, States Relations Service, U. S. Department of Agriculture, added a few words before the close of the meeting.

The meeting of the Council will be more fully reported later. The most immediate question discussed was that of the place of the annual meeting. Though Miss Berry did not withdraw her invitation to Minnesota it is much more convenient for her to have us come another year. The result of the postal card questionnaire showed that a large majority of those answering preferred to have the meeting in the East since the N. E. A. meets here this year.

Miss Van Rensselaer has invited us to come again to Ithaca and those of us who received Cornell's hospitality a few years ago would gladly accept her invitation. The decision between Ithaca and a place nearer New York was left to the Executive Committee and will be reported immediately.

Child Labor Conference. The twelfth annual conference on child labor which has just closed its sessions at Asheville, N. C., was one of the most important in the history of the National Child Labor Committee. All of the sessions were well attended and some of them overflowed into the largest auditorium in the city.

The discussion at the Conference naturally turned on the actual conditions in North Carolina and whether the action of the Congressmen from the state in opposing the Keating-Owen bill represented the feeling of the majority of the people or merely a few cotton-mill owners. The local speakers were emphatic in declaring the child labor problem acute in North Carolina, thereby corroborating facts brought out by the National Child Labor Committee in its recent investigations. Answering the "poor widow" argument so frequently advanced,

Dr. George T. Winston of Asheville said, "The mill men say that they are looking out for the children of widows. Then there must be more widows here than in any other state in the Union, judging by the numbers of children employed. If child labor was ever necessary here, the need no longer exists." All of the local speakers, except representatives of the cotton interests, agreed that North Carolina is entirely able to take care of the families who actually depend on their children for support, and that the children of the state are an asset too valuable to carry the burden of family support.

The real issue was whether North Carolina should meet her problem by state or federal regulation. Some facts in the history of attempted child labor legislation in the state were given at the first session by Hon. Zebulon Weaver, of Asheville, who sponsored the child labor bill that was defeated by the last state legislature. He said the children of North Carolina would never be saved until Congress acts. "It is a day of conservation," said Mr. Weaver, "We conserve our trees and our cattle. Is it not time to conserve the health and welfare of our children?"

The question of federal regulation resolved itself into a debate between Congressman Britt of Asheville, and Congressman Keating, of Colorado. Mr. Britt voted against the Keating bill last week in Congress, and he came to the conference to explain that he voted against it for two reasons: first, because he considers it unconstitutional, and second, because he does not consider it humanitarian in its effect on the children. He opposed the bill on constitutional grounds because he believes it is a regulation of manufacture rather than commerce, and therefore not comparable to other interstate commerce acts. His objection to the bill on humanitarian grounds was his conviction that by taking children out of industry it will result in their ultimate ruin because they will do nothing but idle on the streets. He declared himself in favor of a state law similar to the Weaver bill defeated here last year.

In answering Mr. Britt, Mr. Keating argued that no bill could be condemned as unconstitutional until a definite constitutional objection or inhibition could be found in it, and that no man had been able to discover any clause in the constitution or in Supreme Court decisions which could prove this bill unconstitutional. On the other hand he cited a number of Supreme Court decisions to prove it entirely constitutional.

Mr. Keating found Mr. Britt's arguments for state legislation equally faulty. "Mr. Britt says he favored the Weaver bill of last year. The Weaver bill was even more stringent than this federal child labor bill. If the federal bill will take the children out of industry and put them on the streets why would not the Weaver bill have done the same thing? As a matter of fact neither bill would put them on the streets. The children will be in school most of the time, and they will have some time for play too."

Women were present in large number at all the conference sessions and gave every evidence of being keenly alive to the importance of the problem and of the fact that they might help to bring North Carolina up to standard.

National American Conference. Miss Emma Smedley was appointed delegate from the American Home Economics Association to the National American Conference held in Philadelphia, January 19-20, 1916.

It is the object of the Committee to act as a Clearing-house for all the various organizations throughout the country working with the immigrant.

The Committee recognizes that Americanization is a complex process, produced by many agencies, and not to be swiftly accomplished. But it believes that the English language, American citizenship and American standards of living are, without question, the first steps.

Miss Frances A. Kellor (Third Vice-President) strongly emphasized the fact that it is the American citizen's attitude toward his foreign-bred neighbor which determines the success of this great national task.

Some of our leading statesmen and edu-

cators were present and appealed to every citizen to do his part.

A Textile Exhibition. The Newark Museum Association of Newark, N. J., held an exhibit of the textile industries of New Jersey February 1 to March 18 to include cloth making, knitting, embroidery, rug weaving, felt hat making and allied industries.

The Museum endeavored to show, in the History of Textiles of New Jersey, the history of textiles of all time. They showed articles made by the Indians before the white man came; Colonial blue and white coverlets, samplers, bead bags, and linsey woolsey, collected by the Federation of Women's Clubs of the State of New Jersey. They took the commercial exhibit and put it up in a dignified art museum way. They aimed to show not only the finished products, but also processes from primitive spinning and weaving to modern power machines, and the development of each fibre from the fibre itself to the finished cloth.

A great deal of educational work was done in connection with the exhibit. Classes of school children, sales people, club women and other groups were conducted through the exhibit by special instructors.

The College of Industrial Arts at Denton, Texas gave during January a short course in Home Economics extension work to over thirty of the County Canning Club and Home Demonstration Agents of the State, planned directly for the agents themselves and indirectly to meet the conditions and needs of the farm home.

President F. M. Bralley and Clarence A. Tripp, director of the extension service of the college had charge of the work. Miss Virginia Babb, domestic art; Miss Corabel Weimer, domestic science; Prof. C. H. Yarbrough, rural arts and sciences; Miss Jessie H. Humphries, history and the social sciences; Miss Willie I. Birge, biology; and Miss Anna M. Cron, manual arts and house planning, were among the directors of departments who gave courses, while Miss Floris S. Culver, domestic science, and others shared in the work.

The canning club workers themselves contributed to numbers of programs, especially those demonstrating the making of fireless cookers, the canning of meat in tin cans, jelly making and the canning of vegetables, while a series of evening lectures was given, bearing upon rural extension service by women. Prominent visitors and speakers included Miss Ola Powell and O. B. Martin, from the United States Department of Agriculture; Dr. W. B. Bizzell, president of the Agricultural and Mechanical College of Texas; Miss Bernice Carter, state agent for canning club work in Texas; Miss Alice Keeler, state agent for Louisiana; and J. L. McLain, of the Bureau of Animal Industry of the United States Department of Agriculture, who gave a practical demonstration of butter making in the farm home. Miss Jessie P. Rich of the University of Texas introduced the subject of the "National Baby Campaign" to the canning club and home demonstration agents.

A Vacation Canning Club. An interesting experiment was tried at the Webster Avenue Grammar School, in Providence, of starting a canning club, under the direction of Mrs. Margaret Titchener. The work was suggested by a canning demonstration given by Professor Thomas of the Rhode Island State College. More than forty children joined the classes that were held during the school vacation. Not only were fruits canned, but carrots, beets, beet tops, string and butter beans.

A Visitor's Day brought many interested housekeepers to learn as well as observe. The course became so popular that boys asked to join. Pictures were taken of the class and published in the Providence papers. One of the market men was glad to exhibit the canned vegetables.

The last of August an exhibition was given at the school with hundreds of jars of fruits and vegetables displayed. The equipment was very simple, much of it brought from the teacher's home. Mrs. Titchener volunteered her work.

Housekeeper's Short Course in Home Economics. The Florida State College for Women gave a short course to housekeepers

February 22 to March 5. The course included work in sewing, cooking, nutrition, home care of the sick, and art and literature in the home.

The Annual School for Home Demonstration Agents was given in the department the last week of the short course. Students of the short course were given an opportunity to attend the afternoon and evening meetings of this school.

Brief Notes. Miss Anna Barrows, at the close of her Housekeepers' Conferences at the State Agricultural Colleges of Oregon and Utah, spent February in California. While the guest of Miss Vail at Mills College, Miss Barrows spent a day at the University of California and one at Stanford University. At the Palo Alto High School, Miss Barrows gave the boys, on request, a talk on the value of Home Economics for the boys. The keen interest shown by the boys is indicative of a still larger class in the boys' cookery course in the High School. At the Stanford Women's Club House at Stanford University, Miss Barrows, in her attempt to make the women think upon the value of Home Economics for every university girl and of its value in opening up many avenues toward various vocations, aroused a very lasting interest in Home Economics as a college course.

After leaving California Miss Barrows visited the South and gave lectures at the School of Instruction for Home Economics Extension Agents, at Mississippi Agricultural and Mechanical College.

A notable pure food exhibit for a small town was held under the auspices of the Woman's Club in the Village Hall, Barrington, Ill., February 1-4. Among the speakers were Mrs. Baker, the author of the textile articles in the JOURNAL; Miss Winifred Collins, in charge of Home Economics at Chicago Commons and chairman of the Food and Markets Committee of the Woman's City Club; and Mrs. Bley, President of the Chicago Housewife's League.

The topics dealt with food sanitation, and municipal markets, as well as houseplanning, house decoration and the budget.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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FIGURE DRESSED TO REPRESENT MARTHA WASHINGTON, ON EXHIBITION AT
THE NATIONAL MUSEUM. (See page 236.)

THE Journal of Home Economics

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No. 5

HOUSE PLANNING AND FURNISHING

ETHELWYN MILLER

University of Chicago

Happily in our work in House Planning and Furnishing we have passed beyond the stage where we are content to look at pictures, read about houses, furniture and rugs, make elaborate perspective drawings of rooms, collect and mount samples of materials and call all this illustrative material an end in itself. It bears as much relation to true House Furnishing as reading about chemistry does to laboratory experimentation. We are proceeding along the same lines of development as have all laboratory and experimental courses. It is true that we are finding it difficult to advance beyond the stage of mere appreciation, for the recognition and enjoyment of historic forms of architecture, furniture, rugs and wall papers satisfies the historic and literary instincts and it is a necessary basis for the inventive work of the laboratory.

The subject resolves itself therefore into three distinct phases, namely: Design, Recognition of Historic Forms, including designs now on the market, and Practical Handling of Materials. The first phase of the subject should be a definite part of the general design course and should be taught by the art teacher. Here the appreciation of the general principles of design is gained through problems relating to the home. Design being the harmonious relation of parts and this harmony being expressed to the eye through lines, masses and colors, there is no reason why the response to art principles may not be awakened through a study of harmony as found in Oriental rugs, Gothic, French or English furniture, historic wall papers, American potteries, Colonial doorways, woven

and block printed designs in fabrics. Just as great skill of hand and eye can be gained in drawing and painting the design found in the above named subjects as can be gained in drawing and painting the traditional subjects of the art course. For this reason the work in House Furnishing should begin in the design work of the primary grades and should continue through the entire school life.

The planning and furnishing of a home is a part of the life of every-boy and every girl, of every man and every woman. Just as great interest is manifested on the part of boys and girls of the seventh and eighth grades in putting together the different lines of different types of furniture to make a harmonious room, or in selecting types of architecture suited to the topography of the land, as is shown in combining lines to make a harmonious poster, a book cover, a stained glass window, or a landscape.

With the recognition of the principles of proportion, rhythm, symmetry and subordination in house exteriors, garden plans and house interior arrangements comes the enjoyment of the simplest features of the home. So often the exercises in House Furnishing have been made those of color harmony alone, forgetting that back of color harmony lies harmony of dark and light masses and back of mass relationships lies harmony of lines. Through the study of line harmony we gain an appreciation of the proportion of houses, of gardens, of ceilings, walls, floors and furniture.

The present return to a recognition of the beauty and the value of the structural elements is putting House Furnishing upon a rational basis. For the house should be so well planned both from the scientific and the aesthetic points of view that the furnishing should be but the finishing touch to the building of the house.

A study of the well proportioned rooms of the Italian, French and English, as well as of our own Colonial and Craftsman houses, shows the beauty which is embodied in the harmonious relation of lines of doors, windows, over-door and over-window panels, baseboard, cornice molding and built-in furniture. A recent number of the *House Beautiful* speaks of the satisfaction which one feels at house-cleaning time when the walls are newly papered, but not yet covered with pictures, the wood-work clean and performing its proper function as a framework for window, door and wall panels, the windows clean and as yet unencumbered with draperies, the mantel free from bric-a-brac and the floor with rugs

arranged parallel with the baseboards. This joy, above that felt because of the freshness of the entire room, is a joy in the proportions of the structural elements. The writer suggests that the other furnishings of the room be divided into two piles, the one containing the essentials and the other the non-essentials; that the essentials then be carefully and thoughtfully placed in relation to the structural lines, thus securing a harmony of lines. The non-essentials should be carefully stored out of sight and brought out piece by piece as they seem to be needed.

Pupils should be taught to employ the same common sense in the furnishing of a room that they employ in the costuming of their bodies. They would never consider for one moment wearing all their jewelry at one time or all the time, and yet they do not hesitate to hang all their pictures, group all their pottery where it may be seen and leave pictures and pottery, especially pictures, in the same position until next house-cleaning time.

The appreciation of lines upon walls, floors and ceilings has lessened the number of pictures upon the wall, has hung them from two hooks instead of one, has grouped them in relation to furniture, doors and windows. It has made people feel the lack of unity in hanging pictures upon the pictures in the wall paper. It has simplified the lines of window draperies because windows are considered pictures upon the wall. In the room of informal type it has brought curtains up to the window sills, instead of allowing them to wander against the wall below the sill unbounded by a line of woodwork. It has caused the curtains to be pushed in at the sides so that the window frames may show at top, sides and bottom and thus preserve the structural lines of the window. As artists, then, we put together our composition, not with brush and pencil, but by first planning our composition by the harmonious grouping of lines to define the proportion of spaces; our lines being baseboard, molding, window and door frames, picture frames, mantels, edges of curtains, rugs, draperies, electric light fixtures, chairs, tables, pottery, and other furnishings.

In any design we must have a dominant note, a point of interest. In the drama, the dance and all the visual arts, such as sculpture, painting, architecture, furniture, pottery, jewelry and costume, we find the climax of interest just as we do in the musical composition. This center of interest may be brought about in several ways, namely, by more intricate patterns, by size, by striking contrast of dark and light, by

brilliance of color. Sometimes one and sometimes all of these means are employed for centering the interest. In a library, where the interest may be in the open fire and the colors found in the binding of books, the walls, curtains and rugs are often kept free of intricate lines, so that the eye sees those elements which make for the enjoyment of the real purpose of the room.

In our consideration of the types of domestic architecture now prominent in the United States, we find the Pueblo, the Colonial, the Bungalow, the Craftsman and the school represented by Frank Lloyd Wright, called the Chicago School, as most suited to the needs of our home building population. In each of these types we find the line element the element which we enjoy. In the Pueblo type, by many writers quoted as the only purely American type and preserved in the buildings of the University at Albuquerque, New Mexico, we find the design so decidedly one of long, jagged, horizontal lines that the building seems a part of the cliffs against which it is seen. The Colonial house with its dignified proportions, its simplicity of line and its beautifully accented doorway expresses to us not contrast of dark and light, but rather a simple division by lines of a horizontal rectangle into narrow roof, wide expanse of walls, and adequate foundation, with all interest centered in the doorway and door. With such simplicity in the exterior, how could we "fuss up" the interior? Does it not demand ivory woodwork, including mantels, mahogany furniture with simple curves, dainty window draperies and lighting fixtures of frosted glass globes and hanging crystals?

The bungalow has preserved all through its evolution from the thatched "bangla" of India to the English gentleman's week-end country home, and finally to America's practical every day life, its lines proclaiming the hospitality fostered under its low sloping roof. The friendly wood which adorns both the outside and the inside of the house demands, because of the lines of edges and texture, similar line treatments in furnishings. The curtains, because of their beauty of texture as well as the absence of all attempts at draping, proclaim this beauty in structure and texture. The Craftsman house, while differing from the bungalow in its proportions, yet expresses the same beauty of structural line and texture.

The Chicago School, represented by Mr. Wright as one of its originators, frankly proclaims that its aim is to produce a type of architecture whose lines, low, horizontal ones, repeat the lines of the Illinois prairie. Straight lines are almost exclusively used and because of their original-

ity have been much discussed by the layman. The houses have been said to be built in the shape of ocean liners, or as models of Japanese dwellings. However they may be designated, they harmonize with the topography of the land, as does also the type of residence which the *Craftsman* pictured for us not many months ago as being built in the mountains of Colorado for the President of our United States. Here we find a building whose lines of towers and turrets repeat the lines of the pinnacles and crags of the Rocky Mountains, upon which it is built. Thus not only in the interior of the house should we find harmony of line, but also in the selecting of a type of architecture suited to the topography.

Many of our colorists tell us that harmony of color depends not alone on the proper combination of certain hues but also upon the balancing of values. Returning to the creating of the harmonious room, after we have defined our proportions and shapes by harmonious lines we next plan the distribution of our dark and light masses. As a working basis we see to it that our floors with their covering are darker than the walls, and the walls darker than the ceiling. In our arrangement of curtains, pictures, lighting fixtures we avoid too great contrasts in the unaccented portions of the room. For example, white window curtains are never used when white is not repeated elsewhere in the room—either white ceiling, white woodwork, white furniture, white bedspread and dresser cover, or white table linen must act as a support or balance for the curtains. White and black call attention away from every other value. The former use of white mats or frames about pictures, when no other white was used in the room, drew undue attention to that which should have been a subordinate feature. The present use of black and white in woodwork, draperies, wall papers, furniture and rugs is demanding the greatest care on the part of decorators to preserve the balance between major and minor accents.

In our nature study painting, we often draw the flower in line to get a good composition, then work it out in a neutral composition by using flat charcoal masses and finally wash over these neutral tones with our colors. Thus we have colors which have an interesting play of dark and light. Just so do we plan our room. The balance of dark and light colors is as important as the balance of hues. The colors which we use in a room in the first place proclaim the spirit or purpose of the room; for example the hall inviting you to enter by its general air of friendliness; the living room expressing "livableness"—not too stimulating by

much brilliant color and not characterless by lack of color; the dining-room at present not regarded as a picture gallery or a museum for the display of various cuts of glass or colors in china, but as a background for a table covered with appetizing food; the bedroom so furnished as to suggest rest and repose; the kitchen and bath, with colors which will not fade under treatment from sunlight and soap. The color scheme may be found in the accent note of the room, either an Oriental rug, a beautiful picture, a group of pottery, a bit of tapestry or a beautiful wall paper. It seems most satisfactory to work from a definite scheme in this way rather than to risk visualizing the room from an imaginary scheme.

Color in walls as backgrounds for people, furniture and pictures is the ordinary basis for selection of hues. This is as it should be, for a room is harmonized by the wise planning of the background colors. Second to the consideration of color as background is the recognition of the effect of color upon the nerves of the members of the home. The power of certain hues to stimulate and to depress must be recognized or the spirit of the home is lost. The success which has attended the Color Recitals on the color organ, given in England during the past two years, proves the power of color to arouse emotion. The practical problems of color are no less important. The physical properties of color, the exposure of the room and the amount of light received into the room are all factors influencing choice of hue, value and intensity of color.

If as I said at the beginning, we teach our principles of design through these and many other problems found in the home, we are ready to take up a study of these various items of furnishing from the historic standpoint. The history of the home and its fittings is the history of man from the time when walls first sheltered his family. As we look back to the schools of ten or fifteen years ago, we find that we visualized our history thus: primitive life we saw, and that of Colonial days, but how hazy were our pictures of the home surroundings of the French, the Italian and the English people. No one can read "The Decoration of Houses" by Wharton and Codman and not feel how accurately was the spirit of the centuries and the racial traits within those centuries portrayed in the panelled walls, tapestry hangings, carved furniture and magnificent fireplaces of those peoples. Just so does the scientific spirit of today manifest itself in the sanitary conditions of our furnishings, such as sun-fast curtains, cork and rubber mattings for kitchen floors, furniture

whose upkeep is within the proper time and energy limitations, and washable wall treatment.

The last and most important phase of our subject is that for which the design and historic study are but the prerequisites. We no longer make pictures which never materialize, and we make sketches only when necessary to convey our ideas to others or to crystallize schemes in our own minds.

First, last and always we should keep our school room as a model for demonstrating our principles. From kindergarten through high school the rooms should emphasize the element in House Decoration which the children can appreciate. For example, the dominant accent of the room should be preserved. This may be a group of windows with fern boxes and hanging baskets, or it may be a beautiful picture hung where the child may see it when seated—not perched above the blackboard next to the ceiling; the latter satisfies only the teacher and does not give the child the right idea of the relation between himself and the picture. The teacher's desk during school hours should demonstrate that working conditions and orderly arrangement are not impossible.

If it is not possible to secure a rest room or a club room to furnish, the parents should coöperate with the teachers by allowing the child opportunities at home for arranging pictures, selecting, making and hanging curtains in their own rooms, trying furniture and rugs in different positions. Estimating amounts and kinds of wall paper, sizes and kinds of rugs, buying and placing of the furnishings in one room, is worth more to a pupil than painting fifty pictures. Facts gained by this experience are to be gained in no other way. For example, a class may be at this time working on the problem of furnishing an apartment. This apartment is cheaply and quickly built, and this fact has influenced the selection of wall treatment. Before the paper hanger or painter is consulted, observations are made of the conditions of walls of the same grade of material which had been standing for one year. The conditions of alabastined walls, painted walls, and those papered are compared and discussed and the following deductions made. With the drying and consequent settling of the wall material the alabastine may peel in flakes. If sizing has been first used, this is not so likely to happen. With flat oil finish, spots are likely to appear where there is excess moisture. With paper it is found that if the paper has a firm texture and no glaze, cracks are less noticeable. In discussing with the paper hanger

the amount of paper needed for a given space, it was found that the same wall space is covered by one bolt of paper regardless of the width of the paper. This led to the discovery of the fact that some bolts contain three rolls and some two rolls, and that rolls differ, the wide paper often having five yards to the roll and the narrow eight yards to the roll. Such facts are only to be gained from experience with the practical tradespeople. It is true we may dictate these facts and have them memorized and returned to us on test day, but intelligent dealing with the tradespeople is the secret of satisfactory house furnishing.

Keeping within certain money restrictions, yet securing efficient equipment and artistic arrangement is our aim. Too often we limit our problem to one of color arrangement. In selecting curtains and rugs the same method is employed as in selecting wall covering. Samples of curtain materials are bought and tested for shrinkage, laundry fading and sun fading. Observations are made in various homes to find the effect of figured and plain curtains upon beauty of woodwork and wall paper. Conversation with successful housewives concerning the ability of some makes of rugs to lie flat on the floor, to stand much usage, or to retain their color leads one to select rugs much more intelligently than if they are selected from the standpoint of color, line and mass alone.

It is the uniting of the problems of household management with the problems of household art that forms the subject matter for the House Furnishing Course. The two are inseparable, as we who have tried to divorce them know. House decoration is mere froth when it is not based upon efficient equipment and a scientific distribution of the budget. Household management which is not directed by the art spirit is lifeless.

It might seem that it is the province of the decorator and the furnisher to know better than the layman all the intricacies and occultism of the trade; but the man with things to sell, as a rule thinks only of selling them, and from his view point the buyer should know what he wants. And th's process of learning what is desirable to put into the home to make it the ideal of taste and comfort is one so absorbing and so piquant that it becomes a positive joy, as exhilarating as the chase, as absorbing as the search for gold. The eye learns to see those things to which it was blind before, and the mind dresses each discovery with an exquisite draping of the chiffons of romance and history.

HOME ECONOMICS CORRESPONDENCE COURSES OF
COLLEGIATE GRADE¹

ALICE LOOMIS

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People are rapidly learning to turn to their State University for help in all lines. Much information is sought from the College of Agriculture and its Experiment Station, and from the Home Economics Department of the University. The questions range from the feeding of children to why bread becomes ropy and cider from sweet apples will not become vinegar. Extension work has developed partly in answer to these requests for aid. Its contribution has been a vital one of immediate value. The desire for knowledge and inspiration and for training that will make life more intelligible is not confined to the people who want an immediate need satisfied. This desire comes to many college women who are out of touch with school work. They may have had only one year in college or they may perhaps be graduates of eastern colleges who have come to live in isolated homes in new regions. These women desire consecutive work that will lead somewhere. In other words, they wish the equivalent of a college course, by correspondence.

In discussing correspondence work in Home Economics of collegiate grade, three distinct questions should be answered: first can it be done; second, if it can be done, is there a demand for it; and third, should the other questions be answered in the affirmative, how can it best be done?

In order to answer these questions, a questionnaire was sent out to all the Home Economics departments in land grant colleges. The answers to the first question varied from expressions of honest doubt regarding means of insuring a satisfactory grade of work to the statement that "it can not be done, and if it is done by some other institution, such work will not be recognized." Four state institutions reported that such work is being done.

I. The University of Wisconsin gives the following courses in Home Economics by correspondence, for college credit:

1. General survey of Home Economics. 3 credits.
2. Applied design. 3 credits.
3. Selection and preparation of food. 3 credits.

¹ Presented at the Conference of Teachers of Home Economics in Land Grant Colleges and Universities, held in connection with the American Association of Agricultural Colleges, Berkeley, Cal., 1915.

II. The University of Missouri.

1. Introduction to Home Economics. 2 credits.
2. Principles of food preparation. 3 credits.
3. House sanitation. 3 credits.
4. House decoration. 2 credits.
5. Principles of the preservation of food. 3 credits.

III. The University of Nebraska.

- 1 and 2. Elementary food study. Under certain conditions, by complying with the prerequisites required in residence work and doing the reading required in residence, one-half of college credit will be given, that is, two hours for each course.

IV. The University of California, in coöperation with the Santa Barbara Normal School.

1. General survey of Home Economics.

Courses in infant and adult nutrition, which are not at present given credit, are also given by the Correspondence Department of the University of California.

The experience with other subjects should be useful in answering the question as to whether collegiate work may be done by correspondence. Many of this audience remember that Mrs. Richards' contribution to the Society for the Encouragement of Studies at Home was the development of laboratory work in zoölogy, geology and biology. After a short period of work she realized that the enthusiasm of the members was only one asset and that the attainment of high standards of work was equally necessary. In coöperation with the Association of Collegiate Alumnae, correspondence work in science was planned for college graduates, but this was given up later as opportunities for resident graduate study became more common. One has only to turn to the excellent work accomplished by correspondence study in the University of Wisconsin to realize the advantages of this type of work when it is well carried out. The universal opinion of instructors and students in this institution is that there is more close personal contact and a better acquaintance between student and instructor than in the great majority of residence classes.

It would seem not unwise to say that since science work of college grade has been given by correspondence for a number of years in several of our large universities, the question of the possibility of this method of teaching has been answered.

Granting that it can be done, we may ask whether there is a need for

it. No one will attempt to maintain that the craving mind of a person of college training can be entirely satisfied by the "office boy" training, as Dr. Morgan has called it. As another speaker has said, "All teaching should be planned for the 'track to carry all that it will bear.'" It is a principle in pedagogy to appeal to all the experience that the student possesses. It would therefore seem to be logical to conclude that the college woman out of touch with her university and needing help in practical problems might not be satisfied with the same type of information that must of necessity be given to the untrained woman.

At least two classes of women need and appreciate this type of training: first, the college trained homemaker whose knowledge of chemistry and biology or whose training in other lines of work makes her bring a keen mind to the problems which are pressing for solution. Only one who has been in contact with such a problem realizes what an opportunity for mental life such an opening means. As more college women become homemakers and feel the need of expert training for the complex problems they encounter, the question is becoming more common, "Can we not have something different from the practical but often dilute information given by popular magazines?"

Teachers in service are at present confronted with the almost unanswerable problem of how to keep in touch with the progress in their subject. This problem is made especially acute by the fact that a large percentage of teachers have realized that not only was their training inadequate but much of it was absolutely erroneous. It is a common question asked among teachers who have been out of college for a few years, "How much of your subject matter have you had to discard?" Many of us have come to the stage where we almost hesitate to ask an overburdened high school teacher why she is teaching that lactose is the only sugar to use in infant feeding or why she is allowing her students to hold a prejudice against cold storage foods. Almost invariably the response is first a question for information and then the question of where to get more. Often a statement follows that she must "as soon as she can afford it, take a summer or a year off and go to Columbia or some other school and do some graduate work." The teacher does not always realize that it is not the graduate work which she needs, but a better grasp of the most elementary work.

I hope the time will not be far distant when instead of leaving a discouraged teacher with a list of references used in college work, we can say to her, "Take a correspondence course in this subject from this or

the other university and you will save yourself much time when you enter school again, besides gaining the satisfaction of knowing that you are not passing on erroneous beliefs." Even if laboratory work could not be accomplished outside of residence, it would be valuable to develop correspondence work for teachers whose technique is often much better than their grasp of the subject matter which they are trying to link with it.

Correspondence study is also needed in order to set the definite standards which must come before any subject can gain an unquestioned place in the college curriculum. One person who answered the questionnaire must have misunderstood the grade of work considered, for she answered that no course given outside of the state could possibly meet "local needs." The universality of college standards is too generally accepted to make necessary any argument against "California nutrition" "Missouri home management" or "Wisconsin art and design." Many of us are realizing the unsatisfactoriness of present methods of determining the place of a student in our courses who has come from a college, presumably of first rank. The acceptance of a few definite courses by the leading colleges would be an immense help in the fixing of standards, temporary though they would be, as are all expressions of ideals.

The establishment of correspondence study will allow the development of a much needed method of recruiting teachers of Home Economics. Our chairman has said that there is no greater field of work than ours and it would seem to be legitimate for the administrative officers to look in every place for teachers whose training, broad view, and general experience in educational matters, ability to see and solve problems, coupled with practical training, especially fits them for teaching a subject which makes as varied demands in preparation as does Home Economics. These women may have three-fourths, if not more, of the training necessary to make them excellent teachers in Home Economics. An example may be cited where excellent work is now being done by a teacher of clothing and textiles who three years ago scoffed at the idea of taking up a new line of work. I do not know of any women who have been brought into the Home Economics work by means of correspondence courses, but it is reasonable to suppose that such courses would help college women who may be forced to leave their homes, as well as teachers of chemistry and other sciences, to decide whether this field of work offers the opportunity desired.

The last question to be answered is how can correspondence courses

of desirable grade be most economically developed. It must be clearly realized that teaching by correspondence is a highly specialized form of instruction. It means foresight in the careful collection and organization of all material both laboratory and reference. The personal contact of the enthusiastic teacher can not be compensated for by careful planning, but the appreciation of a teacher for her subject can be carried over to the student if the work is properly organized. This means that teaching by correspondence can never be successful if it is a side issue with over-busy instructors or if it is relegated to instructors who would not be given equally high standing in residence work.

But specialists are expensive and not abundant. Since two cents will carry a letter throughout any part of the United States, and the element of time in sending a letter is negligible, there would seem to be no argument against the organization of the work so that one specialist will do whatever work is to be done in her own line in the whole country. Nebraska University has had a correspondence student in Georgia. There is no reason why this girl could not as easily take her work from Missouri or Wisconsin. The wastefulness of the duplication of effort when "plants are running on part time" is as serious a sin educationally as it is industrially. The suggestion has been made that it might be well for one school to develop work along the line of clothing and another along a different line and so on. The institution whose residence work in economics and sociology, in architecture and in art is particularly strong may be able to develop a better course in house management than another institution more fortunate in other lines.

I trust that it is reasonable to conclude that correspondence work of collegiate grade can be done in scientific lines (and we are not prepared to grant that science is the only basis of Home Economics) and that there is a real need for it. Our next step is to organize the work so that it may be economically administered, to the end that this phase of study may be a contribution, first, in the setting of high standards which shall affect the whole field, and, second, in helping people who have a desire to attain these standards more quickly than they otherwise would be able to do.

HOUSEHOLD AMMONIA

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In a paper presented to the Canadian Section of the Society of Chemical Industry in January 1914,¹ the writer reported the results obtained in the analysis of some fifteen samples of liquid and six samples of solid household ammonia, found on the Canadian market. It was found that the solid (powdered) ammonia contained only from 2 to 10 per cent of ammonium carbonate, the remainder of the material being apparently a low grade of soda containing sodium sulphate and sodium chloride. The liquid ammonia was shown to be a very expensive material in comparison with pure strong ammonia, the wholesale cost of one pound of ammonia gas being from 4 to 14 times as much when purchased as household ammonia as when bought in the form of pure, strong ammonia. In another article² based on the same results attention was drawn to the economic absurdity of the household ammonia industry, the waste involved in shipping a diluted liquid about the country where a concentrated one would serve the purpose equally well, and to the fact that the burden of this waste falls upon the consumer.

During the summer of 1915 advantage was taken of an opportunity to buy samples of household ammonia and of pure, strong ammonia at retail in several different places in the Eastern Townships of Quebec, so as to afford a basis for comparison of the retail cost of the two materials to the small housekeeper. The samples of household ammonia were purchased in groceries or general stores in Cowansville, Sweetburg, Farnham, Sherbrooke and Richmond and the samples of strong ammonia in drug stores in the same towns. In one instance a sample of household ammonia was obtained in a drug store in addition to the sample of strong ammonia. This sample (No. 14) proved to be the second strongest and the most economical of the sixteen samples obtained. The contents of each bottle were measured and the strength of each sample determined by titrating the ammonia with normal sulphuric acid, using methyl orange as indicator. All titrations were made in duplicate. From the results the cost of one pound of ammonia gas was calculated. The results are exhibited in the accompanying table.

¹ *Journal of the Society of Chemical Industry*, 33 (1914), pp. 1177-78.

² *JOURNAL OF HOME ECONOMICS*, 7 (1915), pp. 22-25.

The five brands of which more than one sample was collected are all Canadian made and all are put up in dark bottles—doubtless to conceal the yellow color which is frequently present. All of these except brand I have paper seals over the corks, which seals were not broken

Household Ammonia

BRAND NO.	SAMPLE NO.	PLACE OF PURCHASE	DESCRIPTION	MO. CC. NORMAL H ₂ SO ₄ N.F.U. TITRATED BY 10 CC.	GRAMS AMMONIA GAS PER 100 CC.	CON- TENTS OF BOTTLE	PRICE OF BOTTLE	COST OF 1 LB. GAS
I	1	Sherbrooke	Colorless	24.70	4.20	335	\$.20	\$6.45
	2	Sherbrooke	Turbid yellow, a little sediment	7.00	1.19	320	.10	11.90
II	3	Sweetsburg	Pale yellow, a little sediment	17.20	2.92	345	.10	4.50
	4	Sweetsburg	Pale yellow, a little sediment	33.40	5.68	340	.15	3.53
	5	Sherbrooke	Pale yellow, a little sediment	18.73	3.18	360	.15	5.98
	6	Sherbrooke	Deep yellow, very little sediment	29.75	5.06	385	.15	3.48
III	7	Farnham	Colorless, slightly turbid	23.10	3.95	350	.10	3.28
	8	Richmond	Colorless, clear	9.33	1.59	370	.10	7.70
	9	Cowansville	Yellow, turbid	22.73	3.86	375	.08	2.50
IV	10	Farnham	Very deep yellow, turbid	16.63	2.83	350	.10	4.58
	11	Richmond	Pale yellow, turbid	18.53	3.15	380	.10	3.79
V	12	Cowansville	Pale yellow, clear	18.00	3.06	350	.15	6.34
	13	Richmond	Deep yellow, clear	21.08	3.59	345	.15	5.50
VI	14	Richmond	Pale yellow, slightly turbid	58.47	9.95	375	.10	1.22
VII	15	Cowansville	Colorless, turbid sediment in bottle	37.38	6.35	350	.10	2.04
VIII	16	Sherbrooke	Colorless, very turbid (soap)	69.70	11.85	425	.25	2.25
			Average		4.53			4.69
Average, omitting Nos. 14 and 16					3.89			

until the analysis was begun. The individual bottles of the different brands were labeled alike except for a difference in color in one sample of brand III and slight differences in design in brands IV and V. There was in no instance anything to indicate that more than one grade is made by any one manufacturer.

The remarkable differences shown in both the appearance and the strength of the ammonia found in different bottles of the same brand of household ammonia constitute a surprising feature of the results. Sample No. 1 is more than three times as strong as No. 2 and at the same time much better in color. Nos. 7 and 9 are more than twice as strong as No. 8, and of the two, No. 9 is much yellower and more turbid than No. 7. Again, Nos. 4 and 6 are almost twice as strong as Nos. 3 and 5 and No. 6 is much more deeply colored than any of the other samples of brand II. Once more, the two samples of brand IV and the two samples of brand V, although of nearly equal strength, differ greatly in color the one from the other. The manufacturers appear to have no standard of either strength or color. Nevertheless more than one brand proclaims itself upon its label "the standard of strength and purity."

Samples 14, 15 and 16 evidently do not belong to the general run of household ammonias on sale in Canada. They are light-colored or colorless and are put up in colorless bottles. Nos. 15 and 16 are in flat, oval-shaped bottles, closed with rubber stoppers. No. 16 is a turbid ammonia containing soap. It is the strongest of the samples collected. Although it would probably not be suitable for all the uses of household ammonia, it is more economical at 25 cents a bottle than any of the commoner brands. No. 15, although much weaker than No. 16, is even more economical, being only 10 cents a bottle. No. 14, the most economical of all, has been already referred to.

Turning to the samples of pure, strong ammonia, purchased from druggists, we find these much more uniform in strength and better in color than the "household" varieties. It is mainly the differences in price that render Nos. 1 and 2 more expensive than Nos. 3, 4 and 5. The cost of one pound of ammonia gas in even the most expensive of the samples of strong ammonia is much lower than in any of the brands of the "household" article with the single exception of No. 14. Even in the exceptional instance of No. 14, the cost of the pound of gas is greater than in the pure ammonia (No. 5) bought in the same drug store. A pound of the gas can be had in this store for \$1.04 in the form of pure, strong ammonia, whereas in the less pure household article the pound of gas costs \$1.22.

In the twin villages of Cowansville and Sweetsburg one may buy a pound of ammonia gas in the form of pure, strong ammonia for \$1.46, or by buying household ammonia one may pay for it in less pure form \$2.04, \$2.50, \$3.53, \$4.50 or \$6.34, according to the grocery patronized.

In the last instance one is paying between four and five times the amount for which one could get the same amount of gas in purer form from the druggist. In Farnham the pound of gas in pure form costs \$1.32, in the impure form \$3.28 or \$4.58. In Richmond the pound of gas may be had at the druggist's for \$1.04 or for \$1.22 according as one accepts the pure or the "household" article, while at the grocer's one may pay \$3.79, \$5.50 or \$7.70. The last price it will be noticed is over seven times that of the same amount of gas at the druggist's. In Sherbrooke the pound of gas costs \$1.00 pure, while for the impure one may take the choice of paying \$2.25, \$3.48, \$5.98, \$6.45 or \$11.90. In the last

Samples of Pure Ammonia

SAMPLE	PLACE OF PURCHASE	DESCRIPTION	NO. CC. NORMAL H ₂ SO ₄ N.E.D. TITRATED BY 2 CC.	GRAMS AMMONIA GAS PER 100 CC.	CON- TENTS OF BOTTLE CC.	PRICE	COST OF 1 LB. AMMO- NIA GAS
1	Cowansville	Colorless, clear	27.15	23.1	470	\$.35	\$1.46
2	Farnham	Faint yellow, clear	26.40	22.4	460	.30	1.32
3	Sherbrooke	Colorless, clear	28.75	24.2	470	.25	.99
4	Sherbrooke	Colorless, clear	28.25	24.0	470	.25	1.00
5	Richmond	Pale yellow, clear	27.78	23.6	460	.25	1.04
Average				23.46			1.16

(1 pint, wine measure = 473 cc.)

instance one pays practically twelve times as much for a yellow-colored product as for the same amount of gas in a clear, colorless solution.

The average cost of one pound of ammonia gas in the sixteen samples of household ammonia is \$4.69. In the five samples of pure ammonia it is \$1.16. Thus on the average *four times as much* is paid for an *im-pure* article as for a pure one obtainable in the same towns. Why will the housekeeper continue to buy at such enormous disadvantage?

The strength of the typical household ammonia may be fairly estimated by averaging the figures of the sixth column of our table omitting Nos. 14 and 16 which are exceptionally strong. The result shows that one pint of strong ammonia will make six pints of household ammonia of average strength.

EVOLUTIONS OF FASHIONS OF DRESS FOR WOMEN

NOW ON EXHIBITION AT THE U. S. NATIONAL MUSEUM

MRS. CHARLOTTE LEE

The idea of assembling American Historical Costumes at the United States National Museum, and the suggestion that this exhibition should center around the original dresses of mistresses of the White House, originated with Mrs. Julian-James of Washington, and she has been ably assisted by Mrs. Rose Gouverneur Hoes, a great-granddaughter of President Monroe. Mrs. Hoes is now giving a course of lectures on dress, accompanied by lantern slides, before many educational bodies.

The importance of this work can not be over estimated from an educational point of view, as it has inspired many persons to study costume designing, given dressmakers and milliners aid in their work, and above everything else preserved the historic costumes of the country.

Some of the many answers to letters received by the secretary of the Costumes Committee are conclusive proof of the wisdom of this exhibition, and these letters in time will form part of the government archives. In this correspondence it is frequently apparent that owners of historic dresses failed to appreciate their value, possibly a notable example so often seen of "familiarity breeding contempt." Then again the phraseology of other responses seems almost stereotyped: that many of the gowns have been worn out, or by chance were being used as costumes for fancy dress balls and tableaux, and sometimes the answer has been that these priceless heirlooms have entirely disappeared. As an illustration, a skirt of many widths of a remarkable gold brocade, formerly worn by Mrs. Andrew Jackson Donelson, mistress of the White House during President Jackson's administration, at the inaugural ball of Old Hickory's regime, was loaned by the owner to be used in an artist's studio for drapery, and was destroyed by fire. Another fine old costume, unique as an example of dress, was just rescued from the scissors, as the possessor had decided in her own mind that it would make such beautiful fancy work.

When this exhibition began to assume educational proportions it was deemed expedient that the presidential dresses should be placed on ivory colored plaster figures, modeled at the National Museum, to illustrate the fashions of women for over a century even to the most minute detail, such as gloves, fans, handkerchiefs, shoes, combs and hair-

pins. No attempt has been made to obtain a facial resemblance to the women whose costumes are exhibited; the faces have all been made on the same model; but a very careful study has been made from old prints of the coiffure, which in each figure represents the fashion of the day, and consequently is in perfect harmony with the dress.¹

Strange to relate, the dresses of the earlier mistresses of the White House have been easier to obtain than those of a later date. The only gap in the line of succession of the presidential administrations from Martha Washington down to Mrs. Rutherford B. Hayes is the Jefferson period, a deficiency which time will supply. A dress worn by Miss Rose Cleveland during her life as mistress of the White House is expected almost daily at the Museum, and the Lincoln, Andrew Johnson, Garfield, and Roosevelt dresses are sure to follow.

Martha Washington, or as she was styled in revolutionary days, Lady Washington, is the only presidential figure seated. When Washington became President there was no precedent for a mistress of the White House except foreign courts, and Mrs. Washington remained seated when receiving her guests. The first President never shook hands in the present democratic style, but bowed in a most formal fashion. Dolly Madison changed the modes and manners of her predecessors by her free and easy ways, even to returning all visits, but Mrs. Monroe swung back to the old school by refusing to allow her men guests to participate in the parties at the White House unless they wore small clothes and knee breeches, though this was at a time when the masculine attire was made, in part, of pantaloons and shoe-strings. Farther down the line, Mrs. James K. Polk ceased to serve refreshments at the public levees, and tabooed dancing and serving wine on the President's table. Mrs. Taft gave garden parties, served refreshments, and dancing was the favorite pastime of her husband's administration. Indeed, President Taft indulged in dancing as freely as his young guests, and after a party at the White House a young man exclaimed, "only think of rubbing elbows with a President."

In this costume exhibition are many dresses worn at inaugural balls, wedding dresses of the hobble skirt style, and another bridal attire, the dress of the beautiful Harriet Lane, niece of the only bachelor President, James Buchanan, on the occasion of her marriage to Henry Elliot Johnston of Maryland. The material of this dress is *moiré antique*, and

¹ The National Museum has published a catalogue containing twenty-two pictures of these costumes. Price, 50 cents.

was worn at the time when hoop skirts were fashionable. The figures of Mrs. Abigail Adams and her daughter-in-law, Mrs. John Quincy Adams, occupy the same case, and are in striking contrast. The older woman's dress, a plum colored crêpe de chine, is typical of the Puritan matron, while Mrs. Adams junior is dressed in a ball gown trimmed in the most elaborate manner with silver.

Among the strongest points of this historical exhibition, which, by the way, is the only one of its kind in the United States, is the chance given to the student to make an exhaustive study of textiles, view the rise and fall of the bustle and hoop skirt, minutely examine a collection of hats extending over a period of over a hundred years, and enjoy in every detail women's dress, including all the necessary paraphernalia, from the colonial period down to the present time.

A UNIQUE COLLEGE EXHIBIT¹

AVA B. MILAM

School of Home Economics, Oregon Agricultural College

When the plans had been practically completed for the Oregon Building at the Panama-Pacific International Exposition, the Department of Domestic Science of the Oregon State Agricultural College, which is always eager to demonstrate the practical value of Home Economics training, seized the opportunity presented by the Oregon Commission to conduct a tea room in the Oregon Building during the ten months of the Exposition. This tea room was to form the Domestic Science exhibit of the College.

Mrs. Henrietta W. Calvin, at that time Dean of the School of Home Economics, and her co-workers began the formulation of plans, which we must confess were begun with some trepidation, for it was evident that the expense in running such a tea room would be great, and the risk even greater. To justify the exhibit, it must be self-supporting; that is, all transportation, which amounted to three hundred dollars per

¹ *The Industrial Arts Magazine* for April contains another account of this experiment, also written by Miss Milam, that includes some of the bills of fare and recipes.

month, a five hundred dollar concession, and all running expenses must be met by the receipts of the tea room.

It was the desire of the Department to give as many seniors as possible the training which this experience would afford. Two senior women majoring in institutional management were chosen, one to have charge of the kitchen and storeroom, the preparation of food, the making of menus and the ordering; the other to be responsible for the dining room, the family accounts and the laundry. Both of these young women were engaged until the close of the exposition, and were to receive fifty dollars per month and living expenses. Fifty dollars was also paid the woman engaged to do the dishwashing and mopping.

All transportation and living expenses, which amounted to over fifty dollars per month per individual, were paid for the forty-eight other girls, who received one college credit for each of the six weeks' work in the Oregon Building. These senior women were divided into groups of seven. The change of one half of each group of students came every three weeks. This made it possible always to have three or four students with three weeks' experience to work with the new girls. During the entire time an instructor from the Domestic Science Department served as adviser, and each instructor remained on duty one month.

These seven changing students prepared and served breakfast and dinner to the residents of the Oregon Building, numbering from thirty-five to forty. They also prepared and served luncheon for seventy-two. The luncheons only were open to the public, and were planned not for the same people but for different ones. It was the desire of the department to make the work an exhibit and to bring it before as many people as possible. All the work—the buying, the planning, preparing and serving of these three meals—was done by these college women. All of the meals consisted of three courses. Somewhat heavy breakfasts and dinners were served to the Oregon family, for their luncheons usually consisted of "scones."

Meat, cheese or various types of fish souffles, with Parker House rolls and jams were served at every luncheon. The souffles were far more generally liked than any meat served. These seventy-five cent luncheons became so popular that the waiting line began to form by eleven o'clock, and before the dining room opened at twelve o'clock, all tickets for the one o'clock luncheon were given out. The seating capacity of the dining room was thirty-six, and so luncheons were served to two groups of thirty-six and many were turned away each day.

Although the number of guests who could be served was very limited, hundreds each day stopped as they passed down the corridor and watched the girls dressed in white preparing food in a spotless kitchen, all in plain view through the glass partitions which closed off our dining room and kitchen from the hall. The sanitary conditions under which food was prepared were just as impressive as the appetizing food and were just as important a part of our work.

Governors, foreign and state commissioners, artists and authors stood in line for luncheon. It was a most democratic place, for no reservations were made for any one. The humblest guest was shown the same courtesy as the most distinguished visitor. All of this added greatly to the lunchroom's popularity.

The work of these young women was so systematized that all were on duty for the preparation and serving of luncheon, while two prepared breakfast, three served and the others were guests. The dinner in the evening was prepared by the two who were guests at breakfast, so that by the change of duties the students were enabled to see the exposition.

Needless to say, speed was acquired by these young women; the preparation of a three course dinner for forty demanded greater speed than is usually acquired in laboratory practice. The students were most enthusiastic over the work. Their hours were long and they were very tired after each day's work, but their spirit was splendid, for they were chosen according to their standard of work in college and their general qualifications, and so to represent their college was an honor and they knew that the quiet, easy manner which they assumed in their work not only brought their college before the public in a most favorable manner, but helped in the dignifying of service.

It was generally conceded by the Oregon Commissioners that this exhibit was the greatest drawing card to the Oregon Building. It was not an expensive exhibit, for it proved to be not only self-supporting, but when a settlement was made, over two thousand dollars had been cleared. One-half of this went to the Commission, which furnished the equipment, and the other one thousand dollars was immediately turned over to the Student Loan Fund of the College, to be used in helping young women who are struggling for the completion of the college course in Home Economics.

THE SMITH-HUGHES BILL

H. R. 457 (NEW NUMBER H. R. 11250)

S. 703

MARY SCHENCK WOOLMAN

Member of Committee on Smith-Hughes Bill of National Society for the Promotion of Industrial Education and Member of Legislative Committee of American Home Economics Association

The Need for Vocational Education. One million boys and girls leave the schools each year to join the other millions of workers already in wage-earning positions. At least two million boys and girls between the ages of 14 and 16 are at work yearly in unskilled occupations, for as yet the United States has done little to provide a training for them which will lift them above the lower ranges of self support. We are one of the few large nations which do not provide for the continued education of their young people after they have gone to work.

Those who know the conditions of life for unskilled workers, the small wage and difficulties of promotion, realize the seriousness of the situation. It is from such untrained workers, drifting from occupation to occupation, poorly fed, fatigued and discouraged, that the ranks of the unemployed are kept supplied. The problem of vocational education is that of guiding them in the choice of a pursuit and training them for success. This may be done while they are at work or before they go to work.

The Need for Skilled Workers. The United States is an increasingly important industrial nation. Success will depend largely on her working people. Neither the public schools nor systems of apprenticeship are meeting the need of adequate education for workers. Therefore the majority are able to obtain only unskilled jobs. Some means must be provided by which the call of the skilled industries can be met. Important groups of trades require women's delicate manipulation and deft handling; yet few girls are offered instruction that will give them this requisite skill. A great factor in our national prosperity therefore is lacking, for the majority of workers being unskilled cannot assist where the need is greatest.

The desire to provide adequate vocational education is felt throughout the United States; educators, employers, trade-unionists, social workers and philanthropists are united in urging it. Where training has been

given, economic returns have been notable in increased wage earning ability and better citizenship. Opportunities for vocational education should be available for workers in all parts of the country and the varying needs of the many communities should be considered—the farm employments in the field or in the home, the occupations of the small town and the highly specialized trades of the greatest industrial cities should receive like attention if the United States is to give domestic opportunities for all and is to attain greater industrial prominence.

Some of our states have more or less well developed systems and are urging their legislators to greater effort, but even the wealthiest states find it difficult to carry the added expense of vocational training and many, already heavily burdened with meeting the elementary and high school budgets, can undertake little more.

Several kinds of vocational schools are considered necessary. The young wage earners already at work should be helped in day continuation schools and part-time classes in the factory itself, the older worker should have adequate instruction in the evening schools, and day vocational schools may be factors in the preparation of those who have not yet entered the working world.¹

The Smith-Hughes Bill. The need of vocational training being acknowledged as pressing and, in general, the states being unable to support such instruction, a bill has been introduced into the Senate and Congress of the United States to provide Federal Aid to States needing it (H. R. 11250 and S. 703) This measure is called the Smith-Hughes Bill, so named from its sponsors in the Senate and House—Senator Hoke Smith and Representative Dudley M. Hughes, both of Georgia.

The preamble to the bill in its present form reads:

To provide for the promotion of vocational education; to provide for coöperation with the States in the promotion of such education in agriculture, the trades, industries and home economics: to provide for coöperation with the States in the preparation of teachers of vocational subjects; and to authorize the appropriation of money and to regulate its expenditure.

The Federal Grants² are given in two forms in the original bill: (1) For the training of teachers of agricultural, trade and industrial and home economics subjects; (2) For the paying of the salaries of teachers, super-

¹ Report of the Commission on National Aid to Vocational Education v. 1, pp. 46-54.

² Report of Commission, v. 1, p. 14.

visors, and directors of agricultural subjects, and of teachers of trade^a and industrial subjects.

Appropriations are to be given for making studies and investigations which shall be used in vocational schools. Some of the stipulations of the bill are as follows:

I. For each dollar received from the government, the state shall expend an equal amount for the same purpose besides meeting all costs of plant equipment and maintenance.

II. "The controlling purpose of all such education" must be to "fit for useful employment." It must be of less than college grade and designed to meet the needs of persons over 14 years of age who have entered upon trade, industrial, farming or homemaking pursuits.

III. The schools aided in part by the National Government must be under public supervision and control.

IV. Before money for training teachers can be received each state must show that such training will be given only to persons who have had adequate vocational experience in the line of work which they are preparing to teach.

V. To administer these funds in the states each legislature is required to designate or create a state board of not fewer than three members. The existing state board of education may be designated. Thus each state will have its own board and study its local needs, being free to develop its own plans and always taking the initiative in the movement.

According to the present bill the grants are to be given to the States as follows:

YEAR	TOWARD SALARIES FOR AGRICULTURAL TEACHERS	TOWARD SALARIES FOR TRADE, HOME ECONOMICS AND INDUSTRIAL TEACHERS	FOR TRAINING OF TEACHERS FOR VOCATIONAL WORK	FEDERAL BOARD OF VO- CATIONAL EDUCATION FOR ADMINISTRA- TION, INVESTIGATION, STUDIES, ETC.	TOTAL FOR EACH YEAR
1916-17.....	\$500,000	\$500,000	\$500,000	\$200,000	\$1,700,000
1917-18.....	750,000	750,000	700,000	200,000	2,400,000
1918-19.....	1,000,000	1,000,000	900,000	200,000	3,100,000
1919-20.....	1,250,000	1,250,000	1,000,000	300,000	3,700,000
1920-21.....	1,500,000	1,500,000	1,000,000	200,000	4,200,000
1921-22.....	1,750,000	1,750,000	1,000,000	200,000	4,700,000
1922-23.....	2,000,000	2,000,000	1,000,000	200,000	5,200,000
1923-24.....	2,500,000	2,500,000	1,000,000	200,000	6,200,000
1924-25.....	3,000,000	3,000,000	1,000,000	200,000	7,200,000

The maximum in each case above is continued annually after 1924-1925.

^a A change has been made here in H. R. 11250, by inserting the words Home Economics after trade.

The administration of the bill is to be through a Federal Board coöperating with the States through their State Boards. The Federal Board will extend such aid as will stimulate each State to develop its work for itself. Each state is required to submit its plan for using the fund to the Federal Board for approval.

The bill does not offer grants for the regular elementary school work nor for high school courses planned for general training or for college admission. Help may be obtained, however, for the support of teachers for a special section of the high school the aim of which is to provide definitely for a vocation. With girls this vocation may be homemaking of a serious type or direct wage earning occupations. Simple household art work may be given to girls in a continuation school. Girls employed in technical trades such as spinning, weaving and tobacco manufacture, the technique of which is learned better in the trade workrooms, may thus be helped in part-time classes by elementary household arts or by direct homemaking.

The creation of a commission to frame this bill followed a six years' effort to secure Federal Aid for Vocational Education. The leaders of this movement have included Representative Davis of Minnesota, Senator Dolliver of Iowa and Senator Page of Vermont. The latter Senator is still giving thought and work to the measure. The Page Bill passed the Senate in the Congress of 1913. It was lost in the House. The Smith-Lever Bill for giving Federal Aid to extension work among farmers became a law May 8, 1914 and is now being put into effect. The Smith-Hughes Bill extends to the children who work in the shops the help given by the Smith-Lever Bill to those who work on the soil.

As illustrations of some of the useful occupations noted by the Commission for which training should be possible for wage earners, the following⁴ are given:

In the trades and industries: The work of the carpenter, the mason, the baker, the stonecutter, the electrician, the plumber, the machinist, the tool-maker, the engineer, the miner, the painter, the typesetter, the linotype operator, the shoe cutter and laster, the tailor, the garment maker, the straw hat maker, the weaver, the glove maker.

In agriculture: The work of general farming, orcharding, dairying, poultry raising, truck gardening, horticulture, bee culture, and stock raising.

In commerce and commercial pursuits: The work of the bookkeeper, the clerk, the stenographer, the typist, the auditor, and the accountant.

⁴ Report of the Commission, v. 1, pp. 16, 17.

In home economics: The work of cook and housemaid, the dietitian, institution manager, and household decorator.

Home Economics. The Commission gave serious thought to the question of training girls in Home Economics.⁴ It was felt that every girl, no matter what her future calling was to be, should be prepared for the varied duties of the home as an integral part of her general education in the elementary and high school. The States believe in this and are developing it, consequently national grants for this purpose are not required. There is difficulty, however, in providing home training in rural districts, and also the duties of the farmer and his family on the farm and in the home are so closely interrelated that the Commission has recommended grants for "the occupation connected with the work of the farm and the farm home." The Commission recognizes that, aside from general training for the home, there are numerous wage earning and professional callings for women based upon a knowledge of Home Economics; such as, the institutional manager, lunch room head, cook, dressmaker and many others. As these require highly specialized training, the Commission feels that they should be included under the grants for trades and industries.

The Commission also agreed that the work done by Federal agencies in studies, investigations and reports be extended into the field of Home Economics. Much has been done, especially in foods: their preparation, composition and nutritive values; and also in the construction, sanitation and equipment of the farm home. These studies have been productive of so much good in country districts and in educational institutions that they should be enlarged and extended with a view to placing the maintenance and care of the home on a more scientific basis. There is also need for more detailed information on the salaried and wage earning vocations based on a knowledge of Home Economics. Studies relating to the purchase and care of clothing, the planning of budgets, personal and household, the conservation of health, and maintenance of efficiency are needed for use in part-time classes for working girls as well as for young housekeepers. The most needed studies are those which will reach the average girl who does not go to high school or college.

The status of the bill (April 18, 1916) is the following:—It was introduced into the first session of the 64th Congress early in December 1915 and was referred to the Senate Committee on Education and Labor

⁴ Report of the Commission, v. 1, pp. 41, 56, 57.

and to the House Committee on Education. Both Committees have reported favorably upon it and it is likely to come up for debate on the floor of the Senate or the House any day.

The House Committee has already made some changes in the bill: (1) altering the Board of Control from five Cabinet Officers to four representative citizens and a fifth member as permanent Chairman of the Board to be the Commissioner of Education of the United States, and (2) to provide for the paying of salaries of teachers of Home Economics providing "the controlling purpose of such education shall be to fit for useful employment."

The feeling is widespread that the Board of Control should be representative of industry, commerce, agriculture, labor and education. Resolutions not only favoring the bill but also recommending this change in the Board of Control have been passed by the following organizations: the National Society for the Promotion of Industrial Education, the American Home Economics Association, the American Federation of Labor, and the Chamber of Commerce of the United States.

The President of the United States, in his message to Congress urged attention to this bill.

There is danger of delay in securing the passage of the bill, due to two causes:

1. The great pressure upon Congress just now to give consideration to many other measures of importance.

2. The growing possibility of an early adjournment of this session.

The bill will pass if all those interested will act at once.

If you have not already done so, write at once to your Representatives and Senators urging them to support the bill and to do everything possible to secure an immediate vote.

LOGANBERRIES

One of the newer berries that has found its way to the western market, though not yet well known in the East, is the loganberry—a cross between the red Antwerp raspberry, and the Aughinbaugh blackberry.¹ It has been grown to some extent in Michigan, but chiefly in Oregon and other Northwestern states.

The vines are trained on wires, and must in many ways receive careful cultivation. They produce about four tons of berries to the acre, and the cost of picking is said to be \$20 a ton.

The berry is found on the market as fresh fruit as far east as Chicago during the season. It may also be obtained in an evaporated and a canned form, but it seems particularly valuable for its juice.

Probably a dozen firms in Oregon now manufacture this juice, and it will soon be introduced quite generally into the eastern markets. It is said that in one instance a large brewery has given up the manufacture of beer and is confining its efforts to the production of loganberry juice. Many consider this superior to grape juice. It is especially good for flavoring ice cream and sauces and it may be used with gelatine or corn starch for making desserts.

THE QUESTION BOX

Question: In a review in the March issue of the JOURNAL someone included Hutchison as out of date. This has aroused considerable inquiry. In order that we may be able to answer questions, can you tell in what respect and how far Hutchison is out of date? Also, will you or your reviewer say who is up to date. We suppose Dr. Sherman is, but who else? We shall be greatly obliged.

Answer: During the past few years many investigations pertaining to the nutritive requirements in health and disease have been made by leading scientists both in America and in Europe. They have modified many of our theories regarding food values. No matter how recently a book pertaining to nutrition may have been published, it will not

¹ Cyclopeda of Practical Horticulture. By Granville Lowther. Vol. 11, pp. 1244. Published by Encyclopedia of Horticulture Corporations, North Yakima, Wash.

in all probability contain the last work on many disputed subjects. The student of nutrition must keep in touch with more recent literature. Were Hutchison to revise his "Food and Dietetics" he would include with many other changes, some discussions on "Vitamines" (Funk), or "Growth Determinants" (Mendel), for we know now that animals may receive adequate amounts of carbohydrates, fat, protein, water, and inorganic constituents and yet be improperly nourished. Similarly, the next edition of Sherman's "Chemistry of Food and Nutrition" will undoubtedly contain some modification of his chapter on "Inorganic Food-Subs." To cite necessary changes in the various textbooks now in use would require much more space than can be devoted to such a subject in the question column.

Question: We have been using Hutchison's Food and Dietetics as a text and reference book. What book would you recommend to take its place? We have Sherman's Chemistry and Food Products, also Jordan, but for the teacher who can buy only one book, we know of none better than Hutchison.

Answer: The question pertaining to the best textbook for the teacher of domestic science who can have but one book, is difficult to answer. Perhaps the answer to the last question covers this point. I can recommend no one book. With Dr. Sherman's two books, the government publications, including the Experiment Station Record, and Hutchison one might be able to manage the grade or high school work.

Question: Does an acid fruit eaten with a starchy food interfere with the digestion of the latter?

Answer: Since the action of ptyalin, the starch digesting enzyme of the saliva, is inhibited by the presence of acid (0.003 per cent hydrochloric) it is possible that the conditions suggested in the above question are not such as to admit of complete salivary digestion. This, however, would depend upon the proportion of fruit and starch in the given dish. Fortunately, we do not depend wholly upon the diastatic enzyme of the saliva for starch digestion. Nature has provided us with a second enzyme capable of hydrolizing starch, namely, the amyllopsin of the pancreatic juice, so that the starch which escapes digestion in the mouth will be digested farther on in the digestive tract. However, it has been shown by Maxwell (The Relation of Salivary to Gastric Secretion, *Bio-Chemical Journal*, Vol. 9, 1915, p. 323) that colloidal

starch has the power of adsorbing the gastric enzymes. The starch, therefore which has not been changed into soluble forms by the salivary diastase may interfere to a slight extent with gastric digestion. This may be a factor to be considered with those suffering from hypochlorhydria. In health we have no reason to believe that the slight decrease in the gastric enzymes will produce untoward results.

Question: (a) Is the serving of an acid fruit—orange or grape-fruit—as a first course in the breakfast dietetically justified?

(b) Is this permissible when the second course consists of a cereal and cream?

Answer: (a) Since peptic digestion takes place only in the presence of acid—the acidity of the gastric juice being between 0.2 and 0.4 per cent,—addition of the small amount of organic acids of the orange or grape-fruit, in all probability, does not interfere with normal gastric digestion. It is stated by E. H. Starling (*Recent Advances in the Physiology of Digestion*, 1906, p. 77) that the secretion of gastric juice is increased by the administration of acids. Carlson (*American Journal of Physiology*, Vol. 37, 1915, p. 50) reported that the mastication of bread and butter, or the taking of milk into the mouth yields much less gastric juice in the individual investigated than does the chewing of meats or the eating of oranges.

(b) The acid fruit as a first course, followed by cereal and cream, is dietetically justified, provided the individual is not suffering from hyperchlorhydria (a hyper secretion of hydrochloric acid).

Question: Why do breakfast foods disagree with some children?

Answer: There are several reasons why breakfast cereals may disagree with children. Cereals are frequently insufficiently cooked; this is particularly true of the coarser cereals such as cracked wheat, oatmeal, and hominy. For these coarser cereals several hours, from three to five hours, are required. By longer cooking the starch is not only more thoroughly cooked, but the starch cells of the cereal are more easily separated or broken apart when it is chewed.

Cereals are very frequently so cooked that when milk or cream is added a thin porridge is formed and no chewing is necessary. The starch in this colloidal form adsorbs the gastric juice and thus renders it less active (Maxwell: *Biochemical Journal*, Vol. 9, 1915, p. 323). Cereals should be chewed before being taken into the stomach in order

to change the starch to soluble forms and to separate as much as possible the cells of which the cereal is made up.

Children are very apt to put too much sugar on the cereal. Here the sugar will act quite like too much candy. Frequently this decomposes in the stomach causing the "sour stomach" with which we are so familiar.

Sometimes the large amount of cellulose in the coarser cereals is irritating to the intestinal walls of the younger children, therefore this should be removed by straining before giving the cereal. In those cereals which have the outer coats of the grain left on there is also a substance, namely, phytin, which increases peristalsis; it is for this reason that oatmeal water is frequently given young children who are suffering from constipation. Diarrhea has been known to follow the eating of such cereals in younger children.

The JOURNAL is requested to ask for the following information in regard to a course in personal hygiene and home nursing from those who have had experience with a successful course.

Please reply to the JOURNAL. The information will be sent to the questioner and also made available for any others who desire to use it.

1. Is the course elective or required of Home Economics students or of all women students?
2. In what year is it offered?
3. How many hours credit are allowed and how much time is required for lecture, laboratory and outside reading?
4. An outline of the course.
5. Sections which may be omitted because of other courses covering the ground.
6. Suggestions regarding advantageous changes.

FOR THE HOMEMAKER

DISCRIMINATION IN BUYING

CHARLOTTE GIBBS BAKER

In the foregoing papers¹ some suggestion of the problem of buying textiles has been given. It has been stated that there are now seven fibers with which one must be familiar besides several modifications of them; there are also many weaves in which they appear, as well as a variety of finishes given to the cloth woven from them. A suggestion has also been given of the tendency on the part of the manufacturers to meet the public demand for low priced fabrics with adulterated materials, and to make effect rather than wearing quality the criterion in novelty goods.

If one is to buy intelligently, one not only must be familiar with and able to recognize the different fibers in their various forms, the common adulterations and other poor qualities of materials on the market, but also must choose among the good fabrics those which are best suited to the purpose for which one is buying. One must have not only a knowledge of materials, but also the ability to determine the relative value of different materials for a given purpose, with due regard to the size of the family income.

A knowledge of materials is gained only through experience in buying, but less experience is required, and less painful experience, if one is familiar with some of the facts about materials. The appearance and the feel of a piece of cloth will after all be the tests which must be used in most buying, but one must know first how the cloth ought to look and feel.

Cotton cloth because of its dull flat surface, or even a cotton thread interwoven with a thread of another fiber, is easy to recognize. Because of its elasticity it lacks the firmness and body of linen. By its feeling of smoothness it may be distinguished from wool. The broken end of a cotton thread has a characteristic blunt and tufted appearance.

¹ See the JOURNAL for March, pp. 144-147 and for April pp. 191-195.

A match applied to cotton thread or cloth causes it to burn readily with a continuous flame. The chief virtues of cotton cloth are its cheapness and the ease with which it washes. The first of these virtues it shares with no other fiber, the second with linen alone. Cotton, though it does not lack beauty, has not the luster of the other fibers.

Luster is due to the play of light on a smooth surface; cotton may be given a smooth surface by either of two methods. In mercerization the cotton is treated under tension with alkali, when the fibers untwist, swell, and assume a glossy appearance. By heavy pressure between engraved rollers cotton cloth may be given a smooth surface with some luster. The first of these processes gives a permanent luster, the second a temporary one only. On examination, the luster of mercerized cotton is found on both sides of as well as through the cloth, while the luster of heavy pressing is a surface luster only.

Wool owes to its scaly surface, its natural luster and its characteristic kink whatever distinction it may enjoy. Wool yarn is of two kinds; for worsted yarn the fibers are combed a number of times until they all lie parallel; for woollen yarn the few processes of arranging the fibers into a thread leave them criss cross with the ends projecting all over the surface. The finishing processes merely shrink and full worsted, making it more firm and giving it a finished look. The processes for woollens do this and more, as the ends of the fibers are picked up and matted together on the surface, thus concealing the threads of the weave. Serge and voile are examples of worsteds, broadcloth and flannel of woollens.

The long combing of worsteds does not permit the mixture of a fiber as short as cotton; on the other hand, cotton may be readily spun with wool in a woollen thread. A worsted thread and a cotton thread may be twisted together, or threads of the two may be mixed in the weave; in either case the cotton may be readily distinguished. The matting together of the fibers in woollen cloth makes it easy to conceal cotton in their midst, whether the cotton is in the thread with the wool, or only mixed in the weave. The presence of cotton may sometimes be distinguished by its flaring up when thread or cloth is burned, as wool burns very slowly and with little flame.

Shoddy, or made over wool, is usually mixed with new wool or cotton and can be recognized only when of such poor grade that a thread of the material will break to bits with little tension, short threads at the same time dropping out. A piece of woollen which lacks luster and newness

may also be suspected of the presence of shoddy. Shoddy will not be found in worsteds.

Mohair, brilliantine, and alpaca, all products of the hair of various goats, are woven with cotton or silk warp. Because of the nature of goat's hair the common objection to the mixture of cotton and wool, based on the uneven shrinkage of the two and the consequent tendency of a mixed material to shrink unevenly does not apply here.

Since pure silk is such a durable material it seems a pity that the demand for low priced rather than durable silks has limited the supply of pure silk fabrics on the market. China silk, crêpe de chine, and other thin or wash silks are practically pure. Pongee, since the natural gum can not be removed, is not weighted. Spun silk, on the one hand, and very high grade silks, on the other hand, do not as a rule have much weighting. Neither luster nor softness are guarantees of purity in silk, for such is the nature of the fiber that even the addition of much foreign substance does not destroy its beauty. On the other hand, dull and harsh silks may be pure. Spun silk is dull; silk with the gum left on is both dull and harsh.

A thread of high grade silk untwisted between the fingers shows very few ends of fibers; a spun silk thread shows ends all along the surface; the fibers of a pongee thread retain the kinks from the twist of the thread, are stiff and fly apart readily. Artificial or as it is commonly called fiber silk has a metallic luster, the fibers are as a rule coarser than those of true silk, very few ends are visible, and in fact the whole nature of the thread is different.

A silk thread when pure burns slowly leaving a little ball of ash. If heavily weighted the burning is slower, sometimes with no flame, the amount of ash is greater, sometimes keeping the form of the thread, or in the case of cloth, the shape of the original sample. Tests of a number of materials give some idea of the comparative amounts of weighting. Artificial silk burns quickly, more as cotton does.

Linen is more difficult than the other fibers to distinguish from its cheaper substitute, cotton. Not only is there more similarity between linen and cotton when spun and woven into cloth, but this similarity is increased by the above mentioned methods of producing luster in cotton cloth.

Linen cloth has a characteristic cool feel, is very smooth, often has a leathery feel in the heavier grades, and the luster has a different quality from the luster given to cotton either by mercerization or by pressing.

A single thread of linen, twisted between the fingers and pulled seems to pull apart rather than to break, and the ends of the thread are pointed rather than tufted as in cotton. The time-honored test of moistening the finger and putting it under a piece of cloth, calling it linen if the moisture comes through at once, is reliable only if the material is not heavy, and has but little starch.

Ramie, or China grass, is sometimes used in mixture with silk. In its pure form it appears most commonly in a medium light weight material somewhat resembling linen. However, ramie may be distinguished by the stiffness of the material, the high luster, and the ease with which it creases. When one once knows the characteristics of ramie it is not difficult to identify.

Jute is found in some upholstery materials, mixed with cotton. The fiber is often used in its natural color which is a little darker and sometimes more yellow than natural linen. It is harsh, as a rule coarse, and the thread has a hard appearance.

The most satisfactory tests for distinguishing fibers are the microscopic tests, although chemical tests give fairly good results. A few of the latter, which are applicable to household use, were given in the January issue of the JOURNAL.

Other points to be considered in the choice of materials are: fineness of thread, firmness of weave, color, design, texture and finish of the fabric. The use to which the material is to be put and the price one can afford to pay will determine which of these points is to be given greater weight in buying.

There are materials such as chiffon and tulle which are not expected to stand a strain and in which firmness of weave is not necessary. A simple test for materials in which firmness is desirable may be made by drawing the material on the bias between the thumb and finger nail at the same time noting whether the threads pull apart. Mixtures of silk and cotton, in which the silk threads are much finer than the cotton, are especially likely to pull in this way. Cotton or linen materials which lack in firmness may be made to appear well by excessive starching. This excessive starch may sometimes show in the meshes of a thin material when held to the light, or it may perhaps be detected by rubbing the cloth between the fingers.

The choice of color from the standpoint of fastness is becoming more and more difficult, due to the scarcity of fast dyes during the war. In the past the quality of the material, the trademark, the word of a re-

liable salesman, together with experience have been the guide posts as they will be again when industries are restored to normal. Color and design should be chosen with due regard to their suitability for a given purpose; there is every opportunity here to display refinement of taste, whether it be in dress or in house furnishings. The choice of texture, too, is important in determining the effect of a gown or of a window drapery. Silk mull will not make an attractive princess gown, nor a stiff heavy fabric a successful window curtain.

That cost is determined by other qualities as well as by the fiber content of a material is shown by the following examples. Of two handkerchiefs costing five and ten cents respectively the former was all linen, while the latter, though finer and more perfectly cut, was all cotton. A mixture of cotton and wool shepherd's plaid cost seventy-five cents; an all wool serge was bought for fifty cents. A dollar and a quarter was paid for a yard of silk and cotton shirting, while a good all silk shirting may be had for ninety-five cents.

Certain characteristics making a fabric desirable for one purpose make it undesirable for other uses. The smoothness of the damask weave, which makes linen thus woven so desirable for table linen, makes it undesirable for towels as it will not absorb moisture so readily as a huck weave. The cool feel of linen, so desirable in summer clothing, sometimes is objectionable in bed linen. Cotton, while not good for hand towels, becomes very desirable when woven differently into a bath towel.

There is then plenty of opportunity for the application of knowledge, taste, and judgment in the discriminate buying of fabrics. As time goes on and new products are put on the market the problem of buying rather than becoming simpler is constantly more complicated. If the family income is to be wisely and profitably spent, women must meet this problem with increased intelligence.

THREE WOMEN AND A FARM

ELLA KAISER CARRUTH

With a large lawn between it and the road, with an orchard on one side and a garden on the other, an old farmhouse stands upon its low foundation. It is the homestead of one of the "old families" of the county and its appearance almost any day indicates that old-time hospitality still holds sway. That the hospitality is paid for by the guests makes it none the less enjoyable. This delightful house is being turned to account as a shelterer of "paying guests" (from one to eight in number) by the three sisters who own it and the surrounding two hundred and twenty acre farm.

Returning to the home of their childhood after perhaps a score of years of city life, the owners cleverly utilized all their capital in making the best possible living from their inheritance.

Not least among their assets is the house, which has been skillfully remodeled and modernized just enough to add the necessary comforts without spoiling the real farmhouse atmosphere. The wide fireplaces about whose crackling fires it is a pleasure to gather on the cool days and evenings of the milder seasons, have been supplemented by a steam heating system. This insures the uniform heat so necessary for winter comfort. A gasoline engine sends water to the tank supplying the bath room which has been added to the house. A telephone brings city friends within hailing distance of the paying guest.

Although the porch and lawn and fields beyond lure the guest on warm days, the delightfully large and yet cozy living room affords a welcome retreat on cool days. In the early spring and late fall it is the center of attraction and deservedly, for it is a rare room. At one end the generous fireplace surrounded by easy chairs suggests a quiet hour with book or magazine. Ample couches conduce to even greater relaxation. The windows on three sides of the room give a variety of outlook and shed much light upon the well-filled book case on the fourth side. Between two of the windows stands a piano for those musically inclined. The floor is covered with beautiful soft-toned oriental rugs, selected with faultless discrimination.

The bed rooms are all airy, clean and simply but comfortably furnished.

The entire atmosphere of the house, from the low, vine-covered porch to the dining room with its long table covered with a snowy cloth and

decorated with a freshly gathered centerpiece of flowers, welcomes the guest and makes him feel at home.

A few menus, chosen at random during the time when the strawberry bed was at its prime and the garden yielding bountifully, will serve as an example of the fare.

Breakfasts

(Practically the same every day)

Fruit	Eggs	Muffins or Toast	Coffee
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Dinners

I

Baked Ham	New Peas	New Potatoes in Cream Sauce
Jelly		Pickles
Strawberries	Cake	Cottage Cheese
		Coffee

II

(Sunday Dinner)

Fricassee Chicken	Boiled New Potatoes	Steamed Dumplings
Stuffed Peppers		Pickled Pears
Pineapple Salad		Cheese
Ice Cream and Crushed Strawberries		Cake
		Coffee

Suppers

I

Strawberry Shortcake	Baked Beans	Cake	Coffee
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II

Potato Salad	Cottage Cheese	Strawberries	Cake
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These casually chosen bills of fare give a very inadequate idea of the excellence of the table. As can be seen, however, the one who plans the meals has progressed far from the ideal of our grandmothers that the table, to be satisfactory, must groan beneath its burden. Although there is always an abundance of everything, excessive quantity has given way to well balanced quality. For instance, the importance of picking vegetables and berries a short time before serving is realized and acted upon. The table is supplied as far as possible from the garden.

The value of a tempting appearance is also recognized. All the dishes are attractive to the eye as well as to the palate. That a table so good in both these respects can be provided with only one maid to help the housekeepers is more easily appreciated than understood. It bespeaks many of the "cardinal virtues" in the maid and more in the mistresses.

One sister presides at either end of the table and "table talk" never lags. All three of the hostesses are college women and well abreast of

the times. Although they do most of the cooking and other work of the house, there is no indication as they take their places at the table that they have just been working in the heat of the kitchen.

Besides managing the house so cleverly as to make it very popular with the people from the neighboring city who are so fortunate as to know about it (they never advertise), the sisters also oversee the running of the farm. The one who acts as business manager of the house acts in the same capacity there where her interests lie principally in two directions.

The place is primarily a dairy farm. A tenant farmer, working "on shares," performs the actual work of raising and gathering the crops, all of which are used to feed their herd of thirty or forty Holsteins. All the milk except that used at home is sold to a large distributing firm in the city, some thirty miles distant.

The "sugar bush" of from twelve to fourteen hundred trees yields an income by no means inconsiderable. From the sale of the maple syrup, the owners expect to realize enough to pay all the "help" for the year. Incidentally it has a double attraction for the guests. In the summer a walk through these woods is most delightful. In the spring and winter evenings "sugaring off" is a rare treat to the people from the city where the snow is seldom clean enough to permit of such use.

For the pleasures of the country combined with the "comforts of home," for the freedom of the fields and woods, for superior meals, for the attentions of cultured and most efficient hostesses the weekly cost is twelve dollars. The charge per day is two dollars and per meal seventy-five cents.

SOME WAYS OF USING JUNKET

ERNESTINE P. SWALLOW

In connection with the article in the April issue of the JOURNAL in regard to rennet some readers may be interested in the following recipes which have been very satisfactory and received with much favor in the family of the writer. These have been gathered from various sources and modified slightly.

JUNKET WITH FRUIT

Dissolve 4 tablespoonfuls sugar in 1 quart of milk. Heat till barely luke warm (about body temperature, 37°C., 98.6°F.). Stir in 1 junket tablet dissolved in 1 tablespoonful cold water. Pour into small cups or frappé glasses, filling half full. Let stand in a warm place till set. Chill. Put strawberries crushed with sugar on top and cover with whipped cream slightly sweetened. Peaches or any fresh or preserved fruit or berries may be used in place of strawberries.

VANILLA ICE CREAM

3 pts. sweet milk	2 c. sugar
1 pt. heavy cream	4 tsp. vanilla

Heat till luke warm and add two junket tablets dissolved in 1 tablespoonful cold water. Leave in warm room till jellied. Freeze.

For *Strawberry Ice Cream* omit vanilla and add juice of berries just before freezing.

CHOCOLATE JUNKET ICE CREAM

3 sq. chocolate	3 c. sugar
2 tbsp. boiling water	2 qts. sweet milk
1 pt. hot milk	1 pt. heavy cream

Mix the chocolate and boiling water, add hot milk and boil until it foams. Then add the sweet milk and the cream.

When lukewarm stir in three junket tablets dissolved in 1 tablespoonful cold water.

Let stand in warm room till firm. Freeze.

PISTACHIO BISQUE ICE CREAM

4 c. lukewarm milk	1½ junket tablets
1 c. heavy cream	1 tbsp. vanilla
1½ c. sugar	1 tsp. almond ext.
½ tsp. salt	Green coloring
1 tbsp. cold water	Chopped English walnuts or almonds

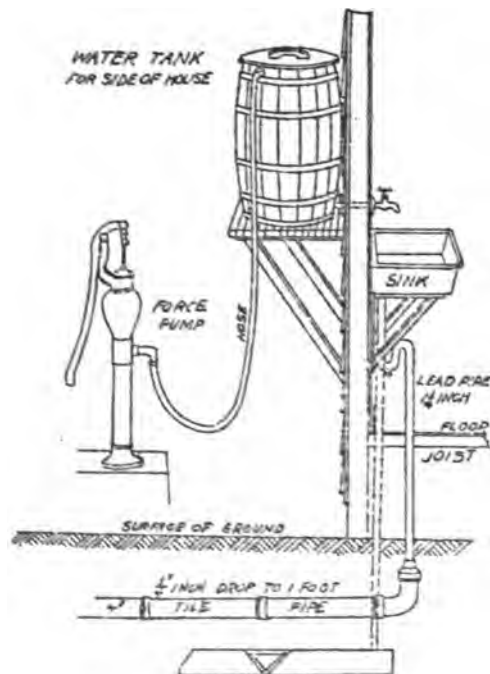
Prepare as for Vanilla Ice Cream, adding flavoring, coloring and nuts just before freezing.

The chief advantage of junket ice cream is that it makes a smooth, rich ice cream with a small amount of cream.

WATERWORKS OUTFIT FOR THE HOME

*Prepared by the Extension Service, Alabama Polytechnic Institute,
Auburn, Alabama*

The outfit here shown includes an ordinary force pump and a barrel for the elevated tank. The tank should be placed as shown, immediately outside the part of the kitchen where the sink is located. A hole is bored in the barrel for a half-inch water pipe to which the faucet is screwed.



The barrel should be fitted with a cover to prevent entrance of mosquitoes and other insects, and to keep out dust and flying leaves. Just below the cover, a hole is bored to accommodate the rubber hose from the pump through which the water is supplied.

The platform for supporting the tank may be braced as shown and should be made of boards about 1 inch thick. The sink may be either plain or galvanized iron; but an enameled sink costs very little more and is decidedly superior to any other form.

The drain may be carried from the sink by the ordinary S-trap made of $1\frac{1}{4}$ inch lead pipe and fitted to the 4 inch tile drain pipe where a sanitary sewer is maintained. If there is no closet drain connected and this is to be used for kitchen drainage only, a simple and cheap arrangement may be made as shown by the dotted lines. The pipe is simply a straight $1\frac{1}{4}$ inch water pipe fitted to screw into a board trough made of three boards, as indicated in the drawing.

The cost of the outfit is approximately as follows: Pump, \$7.50 to \$15, depending upon the make of the pump; sink, \$1 to \$4; lead pipe, \$1.50; iron pipe $1\frac{1}{4}$ inch size, about 8 cents per foot; faucet, $\frac{1}{2}$ inch size, 75 cents.

The entire outfit can be installed at from \$10.00 to \$25.00, according to the quality of materials used.

DAILY QUESTIONS THAT MOTHERS SHOULD ASK

A good review of the information in a new Farmers' Bulletin¹ "Food for Young Children" is found in these questions given at the end of the Bulletin. Every mother who has young children will want to send for this Bulletin.

Did each child take about a quart of milk in one form or another?

Have I taken pains to see that the milk that comes to my house has been handled in a clean way.

If I was obliged to serve skim milk for the sake of cleanness or economy, did I supply a little extra fat in some other way?

Were the fats which I gave the child of the wholesome kind found in milk, cream, butter, and salad oils, or of the unwholesome kind found in doughnuts and other fried foods?

Did I make good use of all skim milk by using it in the preparation of cereal mushes, puddings, or otherwise?

Were all cereal foods thoroughly cooked?

Was the bread soggy? If so, was it because the loaves were too large, or because they were not cooked long enough?

Did I take pains to get a variety of foods from the cereal group by serving a cereal mush once during the day?

¹ Food for Young Children. By Caroline L. Hunt, U. S. Dept. Agr. Bul. 717.

Did I keep in mind that while cereals are good foods in themselves, they do not take the place of meat, milk, eggs, fruit, and vegetables?

Did I keep in mind that children who do not have plenty of fruit and vegetables need wholewheat bread and whole grains served in other ways?

Did each child have an egg or an equivalent amount of meat, fish, or poultry?

Did any child have more than this of flesh foods or eggs? If so, might the money not have been better spent for fruits or vegetables?

If I was unable to get milk, meat, fish, poultry, or eggs, did I serve dried beans, or other legumes thoroughly cooked and carefully seasoned?

Were vegetables and fruits both on the child's bill of fare once during the day? If not, was it because we have not taken pains to raise them in our home garden?

Did either the fruit or the vegetable disagree with the child? If so, ought I to have cooked it more thoroughly, chopped it more finely, or have removed the skins or seeds?

Was the child given sweets between meals, or anything that tempted him to eat when he was not hungry?

Was he allowed to eat sweets when he should have been drinking milk or eating cereals, meat, eggs, fruit, or vegetables?

Were the sweets given to the child simple, that is, unmixed with much fat or with hard substances difficult to chew, and not highly flavored?

Was the food served in a neat and orderly way and did the child take time to chew his food properly?

EDITORIAL

Women's Industry After the War.¹ N. Adler, in a recently published article, recognizes that in dealing with the employment of women it is still too early to say how industry will reorganize after the war or even whether the present conditions will remain stable while hostilities last; yet he believes that a study of the changes which have taken place in England during the first fifteen months of the war may indicate certain lines to be avoided and emphasized when the readjustment comes.

Although much of the material presented bears on the problems of labor rather than those of the household, some of the facts and tendencies described are of direct interest in Home Economics. For example, the fact that women are frequently serving in the place of salesmen in large provision establishments and that special classes have been organized for training them in this work, may mark the beginning of a lasting change in the marketing system. That women have been introduced in the place of men as waiters in both restaurants and clubs, may lead to their employment becoming customary. If, as seems possible, it should prove easier to train them in habits of cleanliness, they might prove superior to men in spite of their inferior strength and the other disadvantages which have hitherto prevented their employment in such establishments.

Bearing more directly upon household conditions is the fact that the temporary opening of many trades to women has reduced the supply of house servants. As long as general social conditions continue to curtail family expenditures, this may not be seriously felt, but it seems unlikely that the supply will reach its former figures, even when other conditions shall have returned to the normal. In the author's opinion

While it is probable that a simpler style of living may be the result of the drain on the national wealth, it seems unlikely that the supply of trained domestics will meet the demand, unless the conditions of work are made

¹ *Contemporary Review*, reprinted in *The Living Age*, no. 3733, January 22, 1916, pp. 207-213.

more attractive, and domestic service is regarded as a highly skilled industry on a par with dressmaking and the other skilled needle trades. Better teaching in the domestic trade school, the keeping of fewer maids, and those better paid and better equipped, combined with less onerous service, may prove one method of dealing with the problem.

Prof. Bruno Roselli in a lecture a few weeks ago at Ford Hall,² Boston, discussed the relation of the war to the immigration of Italian women. The fact that so far the Italian men who have come have greatly outnumbered the women (the proportion varying from 9 to 1 down to 4 to 1) has complicated the Italian problem in many ways. He believes that the immigration of women as well as the knowledge that the Italian has gained through his war experiences in regard to sanitation and cleanliness will do much towards solving the problem of what to do with the Italian immigrant.

He suggests too that Italian house maids will help to solve the domestic service problem, believing that as more women come they will be available for this work. He calls attention to the fact that "Italian women are very domestic in their tastes, notable housekeepers, good economists, almost unexceptionally good cooks."

Even though we may believe that the domestic service problem is not to be solved in so simple a way, it is interesting to have the opinion of an Italian that it may at least be affected by the incoming of a great many Italian women.

Professor Roselli also believes that trades and professions that produce luxuries will be recruited by jewellers, dressmakers, artists and those who have no opportunity at home and that the character of the immigration will be changed.

"The Goal of Household Efficiency." The "Efficient Housewife" and "Why Girls Should Not Be Taught To Do Housework" are the respective titles of two articles in the *Independent* for March 20. They represent from the social standpoint two extreme views.

At first sight Mr. Purinton, the writer of the former articles, would seem to be more in sympathy with the aims and purposes of our Association. Mrs. Bruere, the author of the other, has confused domestic science and domestic service, has used for illustration methods of work that we hope are being discarded, has insisted upon the antithesis of

² Italian Immigration After the War. Ford Hall Folks, March 5, 1916.

"domesticated" and "socialized," has misinterpreted statistics, and has failed to realize that whatever she may think of the desirability to the woman of "the city apartment hotel where her duties consist of checking the monthly bill," the majority of married women do not and cannot live under such conditions. They must of necessity "do housework," and the power to do this in a minimum of time with an optimum result depends largely on their training for it, either by precept or experience. And yet—if her thesis is rightly stated in the editorial that summarizes the series of which this article is the first—we find ourselves in greater sympathy with her point of view than with Mr. Purinton's.

She contends that the real object of household efficiency is to transform as much housework as possible into community work and to reduce the rest to a minimum "so that women may have a chance to do some of the other things, from regulating the gas supply to supervising the schools, that need to be done in a country that is trying to be a democracy;" and that "every new apparatus for house cleaning, every satisfactory prepared food, . . . every invention" is a direct step toward women's political, social and industrial enfranchisement for a larger usefulness." Mr. Purinton, on the other hand, while he advocates training and study and a business administration of the household, in the questions that he formulates for the guidance of the housekeeper, has not one suggestion of social service or interest, not one hint that any part of woman's work lies outside the house, and that the home if it is a real community center must have radii reaching to the circumference of society; and he has no vision of the meaning of the home of today.

But why does the *Independent* ask if the aim of household efficiency is "to make the home a better place to live in *or* an easier place to get away from?"

The "ultimate end of the movement" is to make the home the best possible place in which to live, and to give to the woman as well as to the man a "region of choice," enabling both to share the social opportunity and social responsibility that are a part of true democracy.

COMMENT AND DISCUSSION

To the Editor of the JOURNAL:

I wish to raise the following question concerning the article in the January number of the JOURNAL on "The Comparative Cost of Homemade and Baker's Bread." As I tried to read the article, I had great difficulty in checking up the results because of the different standards used. About one-half of the data seems to be given in measures and the other half in weights. This seems to me a very unwise procedure that may lead to much inaccuracy. For instance, the weight of the flour used is not given. We have a good deal of data about the amount of bread that may be expected from a pound of flour, and in our experiments it varies from $1\frac{4}{10}$ to $1\frac{6}{10}$ pounds. Bakers say that a yield of $1\frac{1}{2}$ pounds in bread for a pound of flour is a low average. It seems to me the experiment ought to be restated with the weights of the materials before one is prepared to draw inferences. The yield of flour in bread seems a very unusual one.

ISABEL BEVIER,
University of Illinois.

The author of the article, Mrs. Marsh, submits this statement:

In the article "The Comparative Cost of Homemade and Baker's Bread" in the January, 1915, JOURNAL, measurements were given in the table, as its object was to give costs and these were more readily reckoned by measurements. I give the following weights.

3 tablespoonfuls sugar	1.5 oz.
3 " lard	1.5 "
1 yeast cake	.5 "
13 cups flour	63.0 "
Total	66.5 oz.

This would give a yield in bread of about 1.7 lbs. for 1 lb. of flour. I wish to state also that these results were those of a single isolated experiment and could not be considered as an average result checked up by a series of similar experiments.

To the JOURNAL OF HOME ECONOMICS:

Is it not time that the American Home Economics Association and its Journal took issue with school boards and superintendents of schools on these points?

The tendency to increase the number of pupils for laboratory work.

The tendency to decrease the period of time for such work.

The contract plan of equipping school kitchens.

The contract plan of furnishing groceries and supplies.

ANNA BARROWS,
Teachers College.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

The High Cost of Living. By G. H. GERBER.
New York: The New York Book Company, 1916, pp. 150. \$0.50.

Lower Living Costs in Cities. By CLYDE LYNDON KING, PH.D. New York: D. Appleton and Company, 1915, pp. 8+355. \$1.50.

The fact that books of this character seek for comment in the pages of a journal devoted to Home Economics marks a great change in attitude toward subjects affecting the home. The preparation of food and clothing within the home no longer marks the confines of the housekeeper's duties. She is beginning to realize that purchasing has become for her a larger and more important function than manufacturing. An appreciation of this fact necessarily places upon her the need of understanding the factors involved in the process of purchasing and this leads naturally to fundamental conceptions in economics. So Mr. Gerber in dealing with labor, capital, trusts, franchises and railroads strikes at the very heart of living costs. His discussion is suggestive but the validity of its argument can be determined only by a well trained student.

Dr. King's book on the other hand deals with many concrete problems directly connected with the administration of the household. Half the book is devoted to Urban Food Costs. The forces which fix prices are described and measures for better distribution are indicated which would result in great economies and presumably in lowered prices. The remainder of the book is given to a discussion of Other Urban Living Costs including such matters as health, recreation, housing, education, municipal utilities and taxation.

Dr. King truly says "urban living costs are what we make them. To a large extent, they are the result of community inefficiency. Minimum living costs, particularly in densely populated centers, must mean social foresight and social efficiency and virility in public action, to the end that useless costs may be eliminated and sane, effective programs for social efficiency be carried into execution. The future, as to living costs, will depend largely upon the individual's initiative in increasing his own productive power, individual sanity in making standards and income meet, and individual perseverance and effectiveness in securing virile and wholesome community and social action."

It is well that homemakers should ponder on these things and act intelligently for, as Xenophon made Socrates say, "while the husband has the making of the money of the household the wife has the spending of it," and many community undertakings belong in truth more to women than to men.

Chemistry of Familiar Things. By SAMUEL SCHMUCKER SADTLER. Philadelphia and London: J. B. Lippincott Company, 1915, pp. 320. \$1.75. By mail of the Journal, \$1.90.

The *Chemistry of Familiar Things* is written for the benefit of the person without scientific training who is interested in the applications of science. The authorship of the volume is sufficient guarantee of the accuracy of the facts offered, but the field covered is so broad, the treatment of each subject so brief, and the arrangement of subjects so empirical that the hope expressed by the author in the preface that it will serve as a textbook in brief courses of chemistry seems hardly justified. It would provide excel-

lent supplementary reading for science courses in secondary schools or brief collegiate courses. Although the volume is named chemistry, the applications of physics are numerous. The literary style is fluid, direct, and interesting, and the treatment is held at a remarkably even plane throughout the book.

The chapter on Light serves to illustrate the empirical arrangement of subject matter. A brief description of the nature of light, of the characteristics of different wave lengths, of ultra violet light in relation to photography and sunburn, of the difficulties of imitating daylight, and the methods which are used toward that end, is followed by a description of the sources of light and the devices for making illumination effective—bacterial phosphorescence, fire flies, acetylene, natural gas, coal gas, water gas, kerosene, electricity, Welsbach mantels, and types of filaments. The chapter ends with two pages devoted to matches, and platinum sponge and cerium lighters.

Other chapters are devoted to heat combustion and insulation, air oxidation and ventilation, water, metals, the earth's evolution, soil, food and feeding, fermentation, soaps, paints, paper, textiles, leather, rubber, and glass.

The Invalid and Convalescent Cookery Book.

By ALYS LOWTH. New York: Longmans, Green and Company, 1914, pp. 120. \$0.60.

There is little new among the three or four hundred recipes in this book. Aside from the chapter on hot and cold drinks there are few of the dishes that are especially adapted to invalids, while many of the recipes are hardly suited even to the convalescent.

The author makes some extreme statements, for example, "White bread is no more nourishing than sawdust; it is quite useless as food, for all the constituents that are necessary have been removed from the flour." "Baking powder in all its varieties is nothing less than a slow poison; it retards digestion and causes dyspepsia." "As a substitute

for baking powder or suet there is nothing to beat soaked sago."

The time given for boiling a fowl,—(three-quarters of an hour for a large bird—twenty to twenty minutes for a small one), and such statements as "If milk and eggs are mixed cold before baking, the custard gets watery," make one doubt the accuracy of the methods used, though one who is looking for new recipes may find some suggestions.

One of the interesting recipes is that for plain paste based on sago soaked in milk or water, wheat meal and butter.

There seems to be little excuse for the first two chapters, or for the last with its "home remedies."

My Cookery Books. By ELIZABETH ROBINS PENNELL. Boston: Houghton, Mifflin and Company, 1903, pp. xiv + 172. \$20.

Old Cookery Books. By W. CAREW HAZLITT. Originally published in Book Lover's Library, Pop. Ed., London (Eliot Stock), 1902, pp. 272. \$1.25.

These volumes are worth calling attention to, not because they are new, for they were published over ten years ago, but because they deserve to be better known among those interested in the historical development of cookery.

Mrs. Pennell owns an exceptionally large and varied collection of old cookery books, ranging from the Latin Apicius Coelius of 1486, to those of the present day, but none later than the 18th Century is here included. While her English collection is the largest, she has also gathered many interesting Italian, French, and Spanish volumes. Her description of the books and their contents gives a charming sketch of the general development of books of this type, from those which deal only with the preparation of royal feasts and banquets to those which concern themselves with the every-day conditions in ordinary households. It reflects the early supremacy of Italian taste, followed by the more refined standards of France in the "grand century," and the half-resent-

ful, half-subservient yielding of the English to the influence of their Gallic neighbors. Many readers will doubtless be surprised to find that some of the most popular cookery books of the 18th Century ran into as many as thirty editions. Mrs. Pennell's book itself is an exceptionally fine example of the bookmaker's art, and the illustrations, copied from title pages and pictures in old books, are perfect of their kind. The edition was limited and is now exhausted, but the book can probably be found in large public libraries.

Hazlitt's little volume seems to be the only other one in English that covers at all the same ground as Mrs. Pennell's. Though far from being as beautiful a book, it has the practical advantages of summarizing its facts more systematically and of being available at a much lower price.

A Group of Cook Books

Manual of Creole Cooking. By J. E. TRIAY (*Manual del Cocinero Criollo.*) Havana, Cuba, 1914, pp. 319.

A compilation of recipes for the preparation of Creole dishes and such Spanish, French, Italian, and English dishes as are generally served in Cuba.

California Mexican-Spanish Cookbook. By BERTHA HAFNER-GINGER. Los Angeles, Cal.: Citizens Print Shop, 1914, pp. 111 + 12, pls. 20.

A book of recipes for the preparation of numerous Spanish dishes, which also contains illustrations of native processes of cooking, ovens, kitchens, etc.

Anglo-American Cooking. Central-American Cooking. By S. C. GOY (*La Cuisine Anglo-Américaine. La Cuisine de l'Amérique Centrale.*) New York: L. Weiss and Company, 1915, pp. 489.

This book contains a large number of recipes for the preparation of dishes common to the United States and Central America.

Indian Chutneys, Pickles, and Preserves. Calcutta: Thacker, Spink and Company, 1914, pp. 92.

This compilation of recipes gives directions for making genuine East Indian products and includes the use of materials not common in the United States. Nevertheless it might prove suggestive to housekeepers and teachers who wish to make similar products from available fruits and other materials.

PAMPHLETS RECEIVED

Digestibility of Some Animal Fats. By C. F. Langworthy and A. D. Holmes. Washington, D. C.: Government Printing Office, 1915, pp. 23. \$0.05. Supt. of Documents. U. S. Department of Agriculture Bulletin 310.

Essentials of Swimming Pool Sanitation. By Wallace A. Manheimer. Washington, D. C.: Government Printing Office, 1915, pp. 16. Supt. of Documents. U. S. Public Health Service.

Extension Course in Vegetable Foods. For self-instructed classes in movable schools of agriculture. By Anna Barrows. Washington, D. C.: Government Printing Office, 1916, pp. 78. Supt. of Documents. U. S. Department of Agriculture Bulletin No. 123. \$0.10.

Food for Young Children. By Caroline L. Hunt. Washington, D. C.: Government Printing Office, 1916, pp. 20. Supt. of Documents. U. S. Department of Agriculture Farmers' Bulletin No. 717, free.

Food Selection for Rational and Economical Living. By C. F. Langworthy. Garrison, N. Y.: Reprinted from *Scientific Monthly*, March, 1916, pp. 294-306.

Institution Recipes. School of Household Science and Arts, Pratt Institute, Brooklyn, N. Y. Sets of 105 cards. \$1.00.

How the World is Fed. By W. J. Showalter. Washington, D. C.: *National Geographic Magazine*, January, 1916, pp. 1-110.

The Road to Trained Service in the Household. By Henrietta Roelofs. National Board of the Y. W. C. A., New York City, pp. 13. (Commission on Household Employment Bulletin, No. 2.)

School Lunches. By Caroline L. Hunt and Mabel Ward. Washington, D. C.: Government Printing Office, 1916, pp. 26. Supt. of Documents. U. S. Department of Agriculture Farmers' Bulletin No. 712.

SOME ARTICLES IN OUR MARCH EXCHANGES

In addition to the scientific papers recorded in our bibliography many of our readers may be interested in articles that appear from time to time in the less technical magazines that are among our exchanges. We shall endeavor each month to call attention to some of these and we shall be grateful if those who see articles of value to the teacher, the student or the housekeeper will kindly call them to the attention of the JOURNAL.

The *Industrial Arts Magazine* for March, 1916, contains an article that should be of interest to the householder. Blistering, Cracking, Scaling and Non-Drying of Paint, Whose Fault? John W. Luthe, p. 118.

The April number of the same magazine begins a series on Wood Finishing, J. M. Dorrans, p. 151.

There is also a series of articles beginning in December, on Domestic Arts in the Grades, Ada Gause.

Manual Training and Vocational Education for March, 1916, contains A Reproduction of an Old Blue Coverlid, Lurene Seymour, p. 535; Reseating a Chair, L. Day Perry, p. 515; Manual Training and Domestic Science in the Rural Demonstration Schools of the Iowa State Teachers College, H. J. Whitacre, p. 545.

The Outlook for March 22, 1916, contains an article on Refrigeration and Artificial Ice, Theodore H. Price, p. 713.

The Modern Hospital for March has two articles of equal interest to the housewife and the teacher giving the hospital experience on the Use of Genuine Agate Ware Utensils, p. 227, and Glass Cooking Utensils, p. 228.

Two articles embodying quite opposite points of view are found in the *Independent* of March 20: the first, Why Girls Should Not be Taught to do Housework, Martha Bensley Bruere, p. 416; and the second, The Efficient Housewife, Edward Earle Purinton, p. 421. One sometimes wonders whether one is most understood by one's enemies or one's friends.

A series of articles in the *Survey*, February 26-March 25, The Four Ages of Woman, John Martin takes issue with Feminism and deprecates other work for women than house-keeping and motherhood, with some reactionary statements in regard to women's wages.

Ida Tarbell in the *Woman's Home Companion* for April, 1916, p. 14, pleads for training the girl for homemaking and for the coöperation of school and home under the title of Give the Girl a Chance.

School and Society for April 1, prints a paper by Alexis F. Lange, The Problem of the Professional Training for Women, p. 480, read before the San Francisco branch of the A. C. A. A summary of this will be given in a later issue.

BIBLIOGRAPHY OF HOME ECONOMICS

PERIODICAL LITERATURE

Contributions to the Bibliography are welcomed. Please send material to the JOURNAL.

FOODS AND COOKERY

On the Nature of the Sugars Found in the Tubers of Sweet Potatoes. K. Miyake, *Jour. Biol. Chem.*, 21 (1915), no. 2, pp. 503-506.

Molasses. A. McGill, *Lab. Inland Rev. Dept. Canada Bul.*, 312 (1915), pp. 21. Analytical data are given regarding 140 samples purchased in Canada as molasses.

Contribution to the Knowledge of the Ripening of Meat. H. Kren, *Wiener Tierärztl. Monatsschr.*, 1 (1914), no. 12, pp. 585-589; *abs. Expt. Sta. Rec.*, 33 (1915), p. 460.

Jams. A. McGill, *Lab. Inland Rev. Dept. Canada Bul.*, 309 (1915), pp. 33. Results of the examination of 227 samples of jams purchased in Canada are reported.

The Organic Phosphorus Compounds of Wheat-bran. C. J. Robinson and J. H. Mueller, *Biochem. Bul.*, 4 (1915), no. 13, pp. 100-117. A controversial article.

The Influence of the Environment on the Milling and Baking Qualities of Wheat in India—III, The Experiments of 1911-12. A. Howard, H. M. Leake, and Gabrielle L. C. Howard, *Mem. Dept. Agr. India, Bot. Ser.* 6 (1914), no. 8, pp. 233-266, pls. 2.

Baking Powders. A. McGill, *Lab. Inland Rev. Dept. Canada Bul.*, 308 (1915), pp. 33. Analyses of 251 samples of baking powders purchased in Canada.

The Chemistry of Rice-polishings. H. Fraser and A. T. Stanton, *Lancet* [London], 1915, I, no. 20, pp. 1021, 1022.

Economical Electric Cooking. Competition of Electricity with Gas and Coal Requires Conservation of Heat Energy and Utilization of Economical Temperature. P. W. Gumaer, *Engin. Mag.*, 49 (1915), no. 4, pp. 580-583, figs. 6. The author gives the ranges of temperature at which the oven should be maintained for the most economical baking of bread and cakes, and the roasting of meats.

Composition of the Grain, Flour, and Milling Offals of Four Varieties of Wheat. H. Hunter, *Dept. Agr. and Tech. Instrs. Ireland Jour.*, 15 (1915), no. 3, pp. 550-562.

Unfermented Grape Juice. A. McGill, *Lab. Inland Rev. Dept. Canada Bul.*, 307 (1915), pp. 19. Data regarding the inspection of 111 samples of unfermented grape juice collected in various parts of Canada.

Banana Meal a Substitute for Flour. J. C. Monaghan, *U. S. Dept. Com., Com. Rpts.*, no. 129 (1915), p. 1019.

NUTRITION

The Rational Apportionment of the Dietary During the 24-hour Cycle. Bergonie, *Rev. Sci.* [Paris], 53 (1915), I, no. 9, pp. 138-145, figs. 4; *abs. Expt. Sta. Rec.*, 33 (1915), p. 464. A summary and digest of data including a number of curves showing the distribution of the heat production during the 24-hour cycle.

The Influence of Drinking Water on the Digestibility of Solid Substances. F. Gröbbels, *Ztschr. Physiol. Chem.*, 89 (1914), no. 1-2, pp. 1-21, figs. 3; *abs. Expt. Sta. Rec.*, 33 (1915), p. 462.

Does Butter Fat Contain Nitrogen and Phosphorus? T. B. Osborne and A. J. Wakeman, *Jour. Biol. Chem.*, 21 (1915), no. 1, pp. 91-94.

Studies on Tissues of Fasting Animals. S. Morgulis, P. E. Howe, and P. B. Hawk, *Biol. Bul. Mar. Biol. Lab. Woods Hole*, 28 (1915), no. 6, pp. 397-406, pl. 1.

Some Metabolic Influences of Bathing in the Great Salt Lake. Helen I. and H. A. Mattill, *Amer. Jour. Physiol.*, 36 (1915), no. 4, pp. 488-500, fig. 1.

Muscular Work and the Respiratory Quotient. S. Morgulis, *Biochem. Bul.*, 3 (1914), no. 11-12, pp. 435-439.

The Influence of Milk Feeding on Mortality and Growth, and on the Character of the Intestinal Flora. L. F. Rettger, *Jour. Expt. Med.*, 21 (1915), no. 4, pp. 365-388.

The Metabolism of Organic and Inorganic Compounds of Phosphorus. E. B. Forbes, et al., *Ohio. Sta. Tech. Bul.*, 6 (1914), pp. 80, pls. 13. This bulletin reports in detail the results of a series of animal feeding experiments to compare the nutritive value of representative phosphorus compounds, including phosphates, hypophosphites, nucleic acid, phytin, and glycerophosphates.

The Influence of Protein Intake upon the Formation of Uric Acid. A. E. Taylor and W. C. Rose, *Jour. Biol. Chem.*, 18 (1914), no. 3, pp. 519, 520.

The Digestibility of the Protein of Cereals, Legumes, and Potato Flour. O. Rammstedt, *Pharm. Zentralhalle*, 56 (1915), nos. 1, pp. 1-7; 2, pp. 14-17; 3, pp. 22-25; *abs. Expt. Sta. Rec.*, 33 (1915), p. 361.

The Influence of Certain Vegetable Fats on Growth. E. V. McCollum and Marguerite Davis, *Jour. Biol. Chem.*, 21 (1915), no. 1, pp. 179-182, pls. 9.

Nutrition with Purified Food Substances. E. V. McCollum and Marguerite Davis, *Jour. Biol. Chem.*, 20 (1915), no. 4, pp. 641-658, figs. 9.

HYGIENE AND SANITATION

A Bacteriological Study of Retail Ice Cream. S. H. Ayres and W. T. Johnson, Jr., *U. S. Dept. Agr. Bul.*, 303 (1915), pp. 24, figs. 4.

Bacterial Content of Desiccated Egg. L. S. Ross, *Proc. Iowa Acad. Sci.*, 21 (1914), pp. 33-49.

The Germicidal Effect of Lactic Acid in Milk. P. G. Heinemann, *Jour. Infect. Diseases*, 16 (1915), no. 3, pp. 479-487. The author concludes that, although resistant strains may survive, the growth of pathogenic bacteria in milk is unlikely in the presence of 0.6 per cent of lactic acid.

Viability of *Bacillus Typhosus* in Ice Cream. O. W. H. Mitchell, *Jour. Amer. Med. Assoc.*, 65 (1915), no. 21, pp. 1795-1797.

The Prevalence of Pellagra.—Its Possible Relation to the Rise in the Cost of Food. E. Sydenstricker, *Pub. Health Rpts.* [U. S.], 30 (1915), no. 43, pp. 3132-3148.

The Prevention of Pellagra.—A Test of Diet Among Institutional Inmates. J. Goldberger, C. H. Waring, and D. G. Willets, *Pub. Health Rpts.* [U. S.], 30 (1915), no. 43, pp. 3117-3131.

Experimental Pellagra in the Human Subject Brought About by a Restricted Diet. J. Goldberger and G. A. Wheeler, *Pub. Health Rpts.* [U. S.], 30 (1915), no. 46, pp. 3336-3339.

Health District No. 1. Lucy G. Oppen, *Forecast*, 11 (1916), no. 3, pp. 160-165, figs. 5. An experiment being tried by the city of New York to bring the various branches of the Public Service closer to the people.

Behind Scenes in the Laundry. P. S. Platt, *Forecast*, 11 (1916), no. 2, pp. 86-91, figs. 5.

NEWS FROM THE FIELD

Program of the Home Economics Department, General Federation of Women's Clubs, Thirteenth Biennial Convention, Friday Morning, May 26, Seventh Regiment Armory, Helen Louise Johnson, Chairman.

Report, Miss Johnson, Chairman; Address, Hon. David R. Houston, Sec. of Agr.; Home Making as a Fine Art, Dr. George E. Vincent, Pres. Univ. of Minn. Friday Afternoon, Home Economics Conference. Greetings, Miss Georgie Bacon.

Food, Mrs. Frederick F. Faville, Chairman: Why We Need Uniform Food Laws, Dr. Carl L. Alsberg, Chief, Bur. of Chem.; Why We Need to Study Food Values, Miss Helen Atwater, Office of Home Econ., Dept. of Agr.

Shelter, Mrs. Albion Fellows Bacon, Chairman: How Women Can Help Solve the Housing Problem, Mr. Lawrence Veiller, Pres., National Housing Assn.; Home Economics and Shelter, Miss Mabel Hyde Kittredge, Pres. Assn. of Practical Housekeeping Centers, New York.

The Child, Mrs. Charles W. Greene, Vice-Chairman: The Child in the Home, Miss Sarah Louise Arnold, Dean, Simmons College; Education of Mothers as a Problem in Democracy, Miss Julia Lathrop, Chief, Children's Bur.

Clothing, Miss Pearl MacDonald, Chairman: Clothes and the Woman, Mrs. Louis F. Post, Washington, D. C., and Mr. Frank A. Parsons, Pres. School of Fine Arts, New York.

Saturday Evening, May 27, Hotel Astor, The Home Economics Exhibit consisting of the History of Costume Presented on Living Models, prepared under the direction of Miss Jane Fales, Teachers College. The exhibit will continue, an hour each day, through Wednesday.

In connection with the exhibit, short talks

will be given by Mrs. Percy V. Pennybacker, Pres., General Federation, and others, ending with a conference on Wednesday.

Monday Afternoon, May 29, Hotel Astor, Miss Bertha M. Terrill of the Univ. of Vt. presiding.

Extension Work in Home Economics: The Smith-Lever Law and its Administration, Dr. A. C. True, States Relations Service; The County Agent and Her Work, Miss Mary E. Creswell, Home Demonstration Work, Washington, D. C.; Work in Rural Clubs, Miss Martha Van Rensselaer, Pres. Amer. Home Econ. Assn., Cornell Univ., and others.

Tuesday Afternoon, May 30, Home Economics Headquarters, Seventh Regiment Armory, Mrs. Joseph T. Gawler presiding: An open conference on Club Problems in Home Economics.

National Conference of Charities and Correction. Educators will join with social workers at the forty-third annual meeting of the National Conference of Charities and Correction at Indianapolis, Indiana, May 10 to 17 in considering what both can do toward solving the big problem of giving children the most effective education and training possible.

Ground that is comparatively new for the conference will be covered by the section on children, of which Miss Julia C. Lathrop, Chief of the Federal Children's Bureau, is the chairman.

A broad field of community problems will be covered by eight other sections of the conference. That on the family and the community will take up the coordination of civic effort in small communities. In its general session the conference will consider conditions adverse to efficient public work under democratic government.

The Ellen Richards Research Prize. The Naples Table Association for Promoting Laboratory Research by Women announces the offer of an eighth prize of one thousand dollars for the best thesis written by a woman, on a scientific subject. This thesis must embody new observations and new conclusions based on independent laboratory research in biological (including psychological), chemical or physical science. The theses offered must be in the hands of the chairman of the committee on the prize, Dr. Lillian Welsh, Goucher College, Baltimore, Md., before February 25, 1917. The title page of each manuscript must bear an assumed name; and the writer must send with her manuscript, a sealed envelope containing her application blank and superscribed with her assumed name.

In April, 1911, the prize was named the Ellen Richards Research Prize in recognition of the devoted service of Mrs. Richards as chairman of the committee on the prize since its appointment in 1900.

Further information may be obtained from the chairman, Dr. Welsh.

The Next Generation. The National Council of Education, after the discussion on "The New Ideal in Education—Better Parents of Better Children," at Detroit, created a "committee to study methods of promoting the ideal of racial well-being," of which Dr. Helen C. Putnam is chairman.

This committee announces a fund, \$1,000 annually for four years, "to be used to help place popular ideals of responsibility for the race above commercial ideals and above individualism."

This fund is to be used for prizes to graduating classes of 1917 in state normal institutions and in departments (or courses) of education and of Home Economics in colleges (including agricultural) and universities, for the best coöperative study by a class of the following proposition: The supreme object of education should be to make the next generation better than living generations. A detailed statement of the conditions of the prizes may be found in the

April *Bulletin of the N. E. A.*, or may be secured from Dr. Putnam, Rhode Island Ave., Providence, R. I.

Immediate notice should be sent by those who intend to enter the contest.

Public Lectures on Nutrition. The Washington Academy of Sciences announced a series of illustrated lectures on nutrition, open to the public, to be given on Friday afternoons during April, 1916, in the auditorium of the New National Museum. The lecturers are men distinguished for their contributions to the great advances recently made in the study of nutrition.

The lecturers and their subjects are as follows:

April 7. Dr. Eugene F. DuBois, Medical Director Russell Sage Institute of Pathology, New York: The Basal Food Requirement of Man.

April 14. Dr. Graham Lusk, Professor of Physiology, Cornell University Medical College: Nutrition and Food Economics.

April 21. Dr. E. B. Forbes, Chief, Department of Nutrition, Ohio Agricultural Experiment Station: Investigations on the Mineral Metabolism of Animals.

April 28. Dr. Carl Voegtlin, U. S. Public Health Service, Washington: The Relation of the Vitamines to Nutrition in Health and Disease.

Mrs. Lillian Massey Treble. Home Economics in Canada owes much to the work of Mrs. Lillian Massey Treble whose life came to an end November 3, 1915. Trustee of a large sum of money bequeathed by her father, she found her first work in the development of the Fred Victor Mission to which her father had given a valuable building. That the ministries of this mission might better reach out and touch the home, the School for Deaconesses was founded. Later beginning in a small way with the establishment of a kitchen garden in the Mission, where the younger girls were taught the simplest rudiments of the great lore of housekeeping, was developed the Lillian Massey School of Domestic Science. In

1902 the course of Household Science was inaugurated in the University of Toronto but the teaching was carried on in this school in the Fred Victor building. In 1904 Miss Massey made a formal offer of a building to the University. This building is today one of the most imposing and most thoroughly equipped buildings in the great University group, and Household Science is one of the special courses leading to the B.A. degree. The work is in charge of Miss Laird, and it has justified many times over Mrs. Treble's faith in its possibilities.

A New Phase of Missionary Preparation. It is not many years since the missionary went to his work in other lands with no thought of any special preparation in the knowledge of food and diet or of sanitation.

It is interesting to know that the student Volunteers of Teachers College asked this last winter for a series of five lectures on nutrition. Mrs. Mary Swartz Rose, with the assistance of Miss McCormick and Miss Pope, is giving the course under the titles: (1) Food for health and efficiency; (2) The diet of the missionary in the field; (3) Food for babies and children in the Orient; (4) The characteristics of native Oriental diets and ways of improving them; (5) Food in sickness.

The University of Illinois. The Household Science Club and Omicron Nu observed Richards Day by an "open house" giving the play, Prince Caloric and Princess Pieta. The tangible results were a contribution of fifty dollars to the Richards Memorial Fund and the recognition of the fact that the content of Home Economics has material for amusement as well as instruction.

The Department gave a somewhat unusual short course, viz., one for bakers, January 31 to March 4. Because the venture was more or less of an experiment and the University Bake Shop is small, the numbers were limited, but they were a representative

group of men, selected by the officers of the Master Bakers' Association. The program was in charge of Prof. Isabel Bevier, Head of the Department of Household Science, and instruction was given by Dr. C. H. Bailey, Cereal Technologist of the University of Minnesota, Dr. F. L. Stevens, Professor of Plant Pathology of the University of Illinois, Miss Anna Williams and other members of the staff of the Household Science Department.

The following paragraph from the report of the State Leader in Home Economics Extension, Miss Mamie Bunch, shows, in so far as statistics can, the results of the work of that Department.

"During this year so far, this Department has conducted 73 weeks of demonstration schools, serving 14,230 people, and 172 separate lectures and demonstrations, serving 67 counties and 19,065 people, in addition to the two weeks' School for Housekeepers here at the University, with its 425 representatives from 35 counties of Illinois and visitors from 7 states. The demonstration car has had 6,201 visitors and 4 weeks of demonstration schools have been given in connection with its service. All told, the Extension Department in Home Economics has served this year 39,921 people."

Simmons College Summer School.

The Summer Session of the School of Household Economics at Simmons College has been established permanently. The large enrollment of 1915 proved that it satisfies a real need. The school is in session this year from July 3 to August 11. The program includes courses in Principles of Cookery, Menu Making and Meal Service, Method of Teaching Cookery, Dietetics, Plain Sewing, Dressmaking, Millinery, Methods of Teaching Sewing, Costume Design, Elementary Inorganic Chemistry, Elementary Organic Chemistry, Food Analysis, Bacteriology, and Public Health Problems. In addition to members of the regular faculty the services of Mrs. Jessamine Chapman Williams of

the University of Arizona, Mrs. Jane S. McKimmon of the Extension Service of North Carolina, and Miss Celestine Schmit of the University of Wisconsin have been secured. Among the special lectures open to students of the school are a group of lectures by Miss Winifred Gibbs of the Association for Improving the Condition of the Poor, New York City, and a group by Miss Sarah G. Flint, Assistant in Charge of Textiles, Boston Museum of Fine Arts.

The University of Texas. Home Economics week was observed at the University of Texas in February, under the direction of the School of Domestic Economy and the Home Welfare Division of the Department of Extension. The object of the conference as stated by Miss Gearing, was "to stress the relation between the home and the community." The program, with the aid of speakers from New York, Chicago and Boston, carried out this purpose in an unusual way. Mrs. W. I. Thomas, of Chicago, spoke on the Social Needs of the Woman in Industry, the Child in the Community, and on *Madam, Who Keeps Your House?* Mr. Ford, a landscape architect from New York, included under his general subject of Town Planning, the Citizens Share in Planning the Town, and Planning the Town for Homes, while Dr. James, of the University of Texas, discussed Woman's Part in City Government. Public Health and the Food Supply, the Purity of the Water Supply, and other topics relating to public health, were included. Mrs. Ruth Carson, of Boston, gave five lectures on dress. Among her subjects were *The Personality of Clothes*, and *Fashion in the Light of Art*. The exhibit that accompanied the conference dealt with some of the fundamental sanitary, social and economic problems of the home and the municipality, and was directly related to the lectures. There were four main divisions of the exhibit. The first consisted of sanitary charts; the next dealt with the economics of the home; the third represented civic art, and the fourth recreational aspects of city life.

Oregon State Agricultural College. Miss Ravenhill, who lectured at the college during the winter Short Course and is to return for three weeks during the summer school sends the following report: The Home Makers' Conference at the Oregon State Agricultural College, early in January, held twelve sessions, four hours each. The weather was mostly atrocious; there were no street cars at Corvallis; gripe had run riot there as elsewhere; but except from eight to nine in the morning the hall was packed, hour by hour, day by day. The lecturers sometimes had hard work to escape from crowds of eager questioners, anxious for fuller details on various points. Extra sessions were held to meet the demand.

The program included cookery demonstrations by that mistress of the art, Miss Anna Barrows, educational in method, with no pandering to tasting and touching. The audience had to think and think hard, too. Admirable lectures on the bacteriological aspects of colds, of children's diseases, and of protection of water and foods were given by college professors. There was practical instruction on vegetable and flower gardening; on the planning of houses; on the difficulties of dressmaking; on art in the home; while a most lucid exposition was given of household accounts and budgets.

There was a series of lectures on what might be termed the Science of Human Life: the rhythms which influence and the conditions which make for efficiency were indicated; the sanitary possibilities in rural homes and the recreational needs of the young folks were dealt with in practical detail; problems as to relative influence of nature and nurture were clearly presented; habit formation in early life and what to learn from the intelligent observation of children were discussed. In each case the best methods of applying in home or community life the results of some acquaintance with the principles which underlie them were laid down and emphasized.

Such a comprehensive program and the appreciation of its packed audiences give evidence of the real desire of our home-

makers for information on a wide range of subjects, information—not frothy generalizations, but actual material from which to build improved methods.

The University of Kansas. At the third "Merchant Short Course" given under the auspices of the University Extension Division at Lawrence, February 7-11, an audience varying from 100 to 250 men listened appreciatively to the daily talks given by the Home Economics Department. Miss Sprague, the head of the Department spoke of the "Merchant and the Housewife;" Miss Downey upon "Food Factors in the High Cost of Living;" and Miss Allen "Upon Practical Tests for Textile Fabrics."

In March the following announcement was made by the department:

On Friday, March 17, during the annual conference of Kansas High Schools and Academies, the Home Economics Department of the University of Kansas will illustrate the various phases of its work:

- I. Demonstrations showing the results of research work on the factors which affect the economic and nutritive value of foods: The technique of pastry making, Miss Parnell; Methods of cooking in deep fat, Miss Keeler; The relative efficiency of various methods of making coffee, Miss Woodruff; Precise methods in preparing frostings, Miss Dyche.
- II. Exhibits showing the scientific principles underlying the selection and preparation of food, clothing and shelter.
- III. Results of research work.

A reception will be held in the Women's Corner, Fraser Hall, from 4.30 to 6.00 p.m. You are cordially invited to attend.

The result of this was a surprise both to the public and the department. The exhibit consisted of two large rooms full of charts with in many cases illustrative material to go with them. The demonstrations were "quite finished bits of work," the lecture room was filled to overflowing with 150 people, while as many more were turned away. Five hundred attended the reception. Even a "strictly academic faculty" voiced its approval and incidentally learned something of what Home Economics means.

A Social Science School. A new university department to be known as the School

of Applied Social Sciences will be opened in September at Western Reserve University.

Dr. J. E. Cutler, head of the department of sociology in Western Reserve University, who, it will be remembered, gave an address on Community Housekeeping at the Cleveland meeting of the American Home Economics Association, has been appointed dean of the school.

The work of the school for the first year has been outlined under four general divisions or fields of service: Family welfare and social service, health administration, play and recreation, municipal administration and public service.

The Home Economics Association of Philadelphia. During the winter this Association has been giving a resumé of the work in Domestic Science and Arts throughout the United States, by means of a questionnaire on the topics Domestic Science, Domestic Arts, School Feeding, Institutional Feeding, and Occupations.

The members visiting the various cities of the West, Middle West, North East and East, during the year have gathered their data.

At the March meeting, Miss Carrie A. Lyford, Specialist in Home Economics, U. S. Bureau of Education, gave to each one in the audience a rare vision of broader opportunity in every branch of Home Economics.

Brief Notes.—Mrs. Calvin of the Bureau of Education will lecture for three weeks during the summer school at the University of California. The subject of these lectures will be Household Administration.

At the March meeting of the Home Economics Association of Greater New York the subject of Laces of the Old Masters was discussed by Miss Frances Morris, Curator of Laces at the Metropolitan Museum of Art.

The New England Home Economics Association held a conference on March 4, at the Boston Public Library. Mrs. Woolman

gave a report from the meeting of the National Association for the Promotion of Industrial Education, and there was an informal discussion on School Credits for Home Work.

The Washington Home Economics Association took a trip through the yeast factory at Langdon, Md., on Saturday, March 25.

At the convention of the Eastern Arts Association in Springfield, Mass., April 20-22, the Household Arts Section, Miss Mabel Lutis, presiding, discussed the following topics: Putting a Problem as The Basis for The Course of Study—The Plan and The Single Lesson, Professor Cora M. Winchell, Teachers College, Columbia University; Rural Problems of Household Arts Education, Miss Laura Comstock, Massachusetts Agricultural College, Amherst.

Miss Eva Robinson of the University of South Dakota writes:

This last month we have been carrying out the following plan. One class for term papers handed in menus worked out on the basis of different prices. These have been published in papers throughout the state and the letters that have come in regard to them show how much women are awakening to all that is done toward better housekeeping.

The spring quarter at George Peabody College for Teachers closes June 12. The summer quarter begins June 15 and closes August 26. This quarterly arrangement makes it possible for a teacher by taking one or two quarters' work at a time to complete the work for a degree on such annual schedules.

The President of the Panama-Pacific Exposition writes to the Secretary of the American Home Economics Association:

"I take this opportunity of expressing the appreciation of the Exposition management to the officers and members of your organization for the part they had in making the

Exposition such an unqualified success. We consider the congress program one of the chief factors in producing that very gratifying result."

Miss McCheyne writes that the demonstration train of the Salt Lake Route will have a car especially devoted to Home Economics, the first in many years. The exhibits will be along the line of child welfare, home decoration, and kitchen furnishings. Lectures upon these various subjects will be delivered.

Dr. Donald B. Armstrong, director of the department of social welfare of the Association for Improving the Condition of the Poor in New York, and Mrs. Armstrong, formerly a sanitary inspector of factories in the state of New York, have been awarded the prize of \$1000 offered by the Metropolitan Life Insurance Company for the best pamphlet on social hygiene for boys and girls.

Prof. Robert H. Richards writes: I thank you very much for sending me a notice of the meeting of the American Home Economics Association. I like to be kept in touch with what is going on, although I shall be unable probably to attend the meetings on account of the many other calls upon my time. My interest naturally is due to the great interest that Mrs. Ellen H. Richards took in the subject, as well as on account of the importance of the subject itself.

A bill to discontinue the Fahrenheit thermometer scale has been introduced into the House of Representatives by Albert Johnson, 3d district, Washington.

Mr. Smoot has introduced a bill (S, 5273) "to provide for an increased annual appropriation for agricultural experiment stations, to be used in researches and experiments in home economics, and regulating the expenditure thereof," as noted in the *Congressional Record*, for March 25, 1916, p. 5534.

THE Journal of Home Economics

**For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics**

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THE Journal of Home Economics

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No. 6

THE TEACHER AND COMMUNITY WELL-BEING¹

GEO. H. VON TUNGELN

Associate Professor of Applied Sociology, Iowa State College

When I accepted your kind invitation to speak before you, it was understood not only that I should be permitted to digress somewhat in what I have to say from this specialized subject and these special problems that you have been presenting, but that I would be expected to do so, and, if possible bring you a few thoughts, or suggestions perhaps, which will help you to realize your cherished ambition to carry your influence into the communities you serve, along other lines as well as through your specialized line, the teaching of Home Economics. In your specialized line of work you are concerned primarily with teaching persons how to get a living, or how to spend an income intelligently and economically, a thing that is quite as difficult today as to provide an income. You are, therefore, preparing persons to meet one of the two great problems that all must meet somehow, some way, the problem of getting a living. What I shall have to say will have to do more directly with the part you may also have in helping persons meet the other great problem of life that all must meet, that of living with and among our fellowmen. These two problems cannot be divorced from each other for each of us must meet both.

We are living in an age of the most rapid progress and advancement of civilization that history has ever recorded. Only as we look back over a few pages of history do we come to understand the speed of our age. There we find such facts as these to remind us of this truth. Queen Elizabeth never had a watch; Napoleon went post-haste from

¹ An address delivered before the Home Economics Division of the Iowa Teachers' Association at Des Moines, November 4, 1915.

Waterloo to Paris in the same way as did Constantine 1000 years before; Shakespeare never read a newspaper; Cromwell never saw a photograph; Washington never saw a steamboat; Lincoln never saw an electric street-railway or an automobile; President Garfield was the first president to have a telephone in the White House, though now the United States with 6 per cent of the world's population has 64 per cent of the world's telephones.

Then we are also told, by an authority, that in 1840 only seven gainful occupations were open to women in the United States, while the 1910 census lists 386 occupations open to women. There we may also find it stated that in 1870 our national wealth was put at \$7,000,000,000 while it is now placed at over \$140,000,000,000 and while we had 9021 miles of railroads in 1850 we now have over 258,000 miles. We are also told, by the United States Bureau of Education, that in 1914 22,000,000 persons were enrolled in educational institutions in the United States, and that the enrollment in public schools for that year exceeded the enrollment of the year before by 84,000 persons. To instruct this great army of young America required 700,000 teachers, 566,000 of whom were teachers in our public schools, and the cost of education for the year was \$750,000,000. This seems a great sum, but it was less than half the value of our corn crop for that year and less, by almost one-seventh, than the value of the exports for a year from our New York harbor.

Of these things we are justly proud, for they help us especially in meeting the first of the two great problems that each of us must meet, that of getting a living. These things have come to the race largely in times of peace and through the exercise of reflective intelligence and honest industry. But with these harvests of peace are also to be noted the horrors of peace that are not necessary parts but attachments or contemporaries of them. These, like the others, are also the products of men. They are here because man is here. They are not the cause of his being here but the results of his being here. In this, then, lies the first bright prospect for their possible removal; they are not necessary to the existence of the good things, or the harvests of peace, and since man has created them or is the cause of their presence with us he is also capable of being the cause of their removal, through united effort. It is individuals that comprise society. It is also the individual that brings to society its problems, therefore, society, through the united effort of the individuals that comprise it, can meet its problems.

A few of the many greater horrors of peace need but be mentioned in order to recall to our minds many on a smaller scale, but nevertheless real, that we meet every day in our own communities if we look for them. Some of these horrors of peace are so appalling that attempts to measure them in figures mean little to us because the figures are too large for our minds fully to grasp. Here are a few examples. Our liquor bill for 1913 was something over \$20 per capita or over \$2,000,000,000. The industry represented a capital invested of over \$775,000,000 and employed less than 100,000 employees, while that same capital invested in the lumber business would have employed 400,000 employees. Our tobacco bill for that year measures a half billion, or as much as it cost to run our public schools that year, or enough to run the Iowa State College, on its present basis, for 400 years. We spend twice as much annually for chewing gum as we do for text books for the children in our public schools, the figures being \$25,000,000 and \$12,000,000, respectively.

In 1910 only a small fractional part over 50 per cent of all the children in our land 16 years of age were attending school. That same year there were 5,000,000 illiterate adults in our country, Iowa alone that year having almost 30,000 white persons well over six years of age who could neither read nor write, and in that same year there were 257 school districts in the state trying to conduct a school with 5 or fewer pupils enrolled in each. Our Federal Children's Bureau tells us that we have an annual infant mortality of 300,000. Only a year ago we were told that "the procession of working children in the United States would take five years to pass a given point if the children appeared at the rate of one a minute day and night."

An investigation, a few years ago, showed that in the great metropolis of the Central West there were spent over \$8,000,000 annually for the sale of women's virtue and men's manhood. What goes on in yonder city is going on every day in your community and mine, probably even on a greater scale in proportion to population, only not so highly paid in dollars and cents, perhaps. Figures also tell us that if our present rate of insanity continues our race will all be insane in a few centuries.

So one might go on almost indefinitely piling up figures of horrors of peace, and almost without exception, find in the respective communities of every one anywhere recruits who belong to one, or possibly several, of these vast armies. These are problems that challenge the best there is in each of us. A fight against them is a fight for the preservation of our race.

By far the most effective, the most interesting, and the most honorable fight that can be put into operation against them is to out-rival them with things that produce opposite results. "Things grow on what they feed upon." If, therefore, we can keep the minds of both our young people and our older people constantly engaged in thinking of things that are wholesome, and their hands busied with doing things that are energizing rather than enervating and debauching, then these monsters that produce the horrors of peace shall surely die. They will die without the other forces ever coming into hostile opposition to them or into open combat with them. They will be defeated without first having learned that an enemy is approaching, without time for better preparation to make a last stand.

In getting into the fight the most important thing to be kept in mind is that we do not need to go to some large and distant city or some backwoods nook to get into the fray. Each of us can start right in the community of which we are a part, or in which we live. This is the most important thing, for when once we can wake up and realize that there is work enough for all right around our own doors then we shall have struck the demons that wrought such havoc among us the most decisive blow that has ever been dealt them. These demons that are the causes of the horrors of peace are quite willing to operate in our own communities. They are quite as content to come into your home and mine to snatch our boy or girl or brother and sister for one of their recruits as to get them in some distant locality. And while you and I are deploring the fact that we are not away off somewhere where there would be an opportunity for us to get into the fight against these monsters, they get in their most deadly work and reap their richest harvest right in our own communities or even in our own families, because no one is even suspecting them of being present there.

We must have faith in our community, our friends, our relatives, our children, but we must not have a faith in them that leaves them no protection. We must have faith enough in them to work for them and be our best for them if we are to have any considerable part in lessening human woe and increasing human happiness.

In preparing our boys and girls to meet these great issues, all of which are to be faced primarily in meeting that second great problem that all must face, the problem of living with and among their fellowmen, our public schools have not played the rôle they might have performed.

In our industrial life there have been three rather marked changes.

First, we have the age of undifferentiated employments. This was the age of the early hunter and agriculturist when men produced all they themselves consumed. The second age is that of differentiated employments. Here the individual made the whole of one product, such as shoes, for example, but made no clothes or did no farming. The third, and present age, is that of the division of labor within differentiated employments. Here the one man no longer makes the entire shoe but only a part of it, possibly only the tacking on of the heel, and a few hundred colleagues make other and different parts of the shoe; altogether they make shoes. This specialization of work has made men far more dependent upon one another. This interdependence has been increased many fold with each change just noted, and many fold more with the coming of each new generation, through the expansion of the human wants and needs of these rising generations. We want and actually need, in our day, more things than did our great grandparents.

The net result of all this is that the man or woman of us who does nothing but tack heels on shoes is, of necessity, about as much interested in the welfare of those men or women of us who make the clothes he wears or the house he lives in, or teach his children, as he is in the man who tacks heels on shoes. So while we specialize or narrow down our life work, we, of necessity, generalize or broaden out our life interests. So we may truly say that while we are specializing man as a workman in society, we are generalizing him as a citizen of society. To be consistent, therefore, we should either train him for both or for neither.

So far, the regular work of our schools has been devoted almost entirely to the preparation of our boys and girls to meet only the one of the two great issues they must face in life. All the time has been devoted to teaching them how to get a living, and the still larger problem of preparing them to live with and among their fellowmen has been left almost wholly to chance. We have taught them how to get and prepare food, clothing, and shelter, but have left the greater problem of social adjustment in the home and society untouched. We teach the girl how to cook for a man and children and how to manage a household, and then think she is qualified to become one member in the partnership that has set for its goal of achievement the development of a home and family. We have been taking about all of the boy's time to teach him how to finance a household, and thus think we have qualified him to become the other member of this partnership.

The mere ability on the part of one member of such a partnership

to finance a household, and the mere ability on the part of the other member to manage a household economically, does not necessarily mean that a happy home will be realized as a joint product from a joint exercise of these two abilities. These two qualifications are some of the means to that end. As essentials to this end there is yet another set of means that may be briefly summed up in this way: In this partnership as in all most successful partnerships no one partner may justly set up for himself the claim that the firm is to be run absolutely according to his own idea or notion, quite irrespective of how the other member of the firm thinks it might well be done. A partnership involves more than one person. Legally a partnership is not possible unless more than one person is concerned, nor is it justly possible religiously, ethically, or politically with but one person concerned. To the highest success of such a partnership, therefore, there is need of an ability and a willingness on the part of each partner to sympathize with, recognize, and, at least sometimes, accept the thoughts and feelings of the other member or members involved, in a spirit that neither mars his happiness nor theirs.

Just how dearly we pay for our lack of development along this group of means to an end of happy homes, we see in our divorce statistics which run now annually a little more than one divorce to each twelve marriages, and in the fact that almost one-half of these are secured before the end of the fifth year of marriage. This fact in itself indicates that many persons are divorced because they have not learned to exercise their group of means. They have failed, in other words, to achieve their goal. The home that they have made would not be recognized when measured by the definition given by the little boy, who, when asked to define home, replied: "Home is the place where mother is."

Now the only way to learn to sympathize with, recognize, and sometimes accept the opinions and feelings of others, not only essential to the building of happy homes but to living happily and successfully with and among our fellowmen, is to come in contact with and learn what these views and feelings or sentiments are. And here it is especially where our greatest opportunities as teachers lie, not only in getting together the people, old and young, of our respective communities for the purpose of healthful recreation, amusement and sociability, but in helping them to become broadminded, levelheaded, with constructive tolerance, and with interchange of ideas. In this way we may best expect to lay the basis for settling some of the great problems that our respective

communities face, not by brawn but by brain, not by destruction but by discussion, not by contamination but by coherence.

No more appropriate place to hold such gatherings or continuation schools, designed to train and prepare for more efficient citizenship and growth in human well-being, could be found than our school buildings. The school-house is the one piece of common property of all and therefore the natural club-house of all. Here the teacher is also naturally recognized as the rightful leader, and put at once in a position to lead and teach parents as well as children and to profit by the teaching they can give her in thus meeting on a common level. In the same way parents will teach each other and teach their children as well as be taught by them at such community gatherings. As teachers you owe it, therefore, to the communities you serve and to yourself to foster and extend the movement that was set on foot only a few years ago, known as the social center movement, to open up school buildings and grounds, at other than school hours, to all the people of the community for citizenship training, or for the better preparing to live with and among each other.

On a smaller scale you can be instrumental in the organization and pushing of smaller groups into societies, clubs, or circles. These will be more limited in their range of activities but not less important in the things they do in their more restricted fields. For larger community undertakings these can be successfully federated for united action. I will take your time to enumerate only a few of many that could be mentioned. Others will be suggested to you by conditions in your respective communities. Some one or two of these may be just what you could set into operation in your community with success. You can not do them all; that would be attempting too much.

First, and of no little importance is The Parent-Teachers' Association. In case there is none in your community set about to organize one. Appeal to the parents to give such organization their support on the basis that since they themselves live in the interest of their children and you live because of their children that you and they, being interested in the same thing, should be interested in each other and each other's problems.

Second, organize classes or clubs to take in the older girls who are not in school and the young married women. A part of the work done in such classes or clubs might well be Home Economics work which will help them to be better able to make their own living or to be better

homemakers, but let some of the activities aim especially at giving these people a broader and saner out-look upon life, and something that will help them to bear up more cheerfully under their regular daily routine, thus brightening both their own lives and the lives of those that must live and work with them.

Third, in the spring of the year get the City Council, Commercial Club, and Women's Club behind the movement to let the school boys and girls organize into teams to rid the city of its winter's accumulated waste. Get some of these organizations to finance the preparation of an evening banquet. To add a little extra interest to it let the various teams compete on the basis of doing the best piece of work or completing first. Let the honor team sit at the head of the table, with girls who made the highest grades in the year's work as the hostesses. This will add greatly to the interest of the work to be done.

Fourth, try to get supervised play organized for the summer. Here you have the assistance of the provision made by the Thirty-sixth General Assembly, which empowers cities or school boards to provide supervised playgrounds.

Fifth, encourage vacant lot cultivation, Boys' and Girls' Clubs, contests of every kind that make for clean boyhood and girlhood, and later manhood and womanhood.

Children as well as grown-ups like to feel that they have really done something and that it has been recognized; for this reason put these things on a constructive contest basis; get the business men and other organizations to offer prizes, and award the highest honor to the highest and greatest accomplishment. Recognize the innate fact in human nature that for the normal individual, whether child or adult, the ideal of life includes something to *be* and something to *do*. Also recognize the fact that the purpose of life is to be happy. Make it easy for the children to lead themselves into being something, doing something and being happy, the stepping stones to honorable citizenship and the highest well-being.

For the benefit of those who are trying or who expect to try something along this line permit me to call your attention to a few things to be remembered which may help some of you not to give up in despair.

1. There are three steps which lead to the final level of achievement in this line of work as in many other lines of work. These three steps are—talk, sentiment, and action. Between the first and second steps

there will always be much talk that falls upon ears that hear not, and as a consequence we have here a great horizontal leakage from the ranks. Between the second and third steps there will always flow a very swift current of the "I think the thing is all right but I will let the other fellow push it," which will result in the second great horizontal leakage. If, therefore, you are to get some action you must expect to have first invested large amounts of talk in order to create enough sentiment so that ample allowance may also be made for the second great leakage, that is certain to occur. There is no better place to turn loose the talk that is to manufacture this sentiment than at the social center and your various gatherings.

2. You must also be prepared to face the fact that novelty will attract the curious as well as the interested. Start something new and many will come only to see and fewer, perhaps, to help. Those who come merely to see may not put in their appearance at the second meeting. Here remember that the success of anything is always to be determined by taking into consideration both its characteristics, quantity and quality. Twelve persons who have come to help are worth many more than twelve times twelve who have come merely to see. Few machines do their best work until the paint is worn off of at least some of the parts.

Finally, when you think that you have taken all things into consideration you will probably still have some skidding on the road to success, but as the servant is worthy of his hire, so here, the world offers you as pay, "honor, position, fame, a useful life and a deathless name," things highly prized but never awarded before they are earned.

COSTUME APPRECIATION

MARY HENLEIGH BROWN AND LUCY D. TAYLOR

To make simple, genuine, aesthetic pleasure a coveted possibility to the vast number of people who, because they have neither desire nor power to do creative work, believe that they are not concerned with art, is of the utmost importance. On the discrimination and taste of the common people hang, not only added sources of individual happiness, but also the quality and vitality of our national art. The art that is rooted in common things, that is an expression of the thoughts, feelings, and desires of common life, is the art that lives, is the red blood art that finds a response in succeeding generations.

Comparatively few people will make the designs that we use in our every day surroundings; few have the type of imagination and the inclination to devote themselves to the rigorous training required to make such creation possible. But the lack of this creative impulse does not in any sense mean a lack of aesthetic interest. There are infinite possibilities for pleasure for those who like to surround themselves with beauty, even though they never touch pencil or brush to make a design. The liking, the sensitiveness to impression, may be strong; fostering and cultivating may bring it to the point of culture.

If the early crude interest in color and ornament is encouraged, and youth is taught to use them discreetly without being forced to undesired production, the unfortunate condition of self consciousness which expresses itself with more or less hypocrisy in the statement, "I don't know anything about art, but I know what I like," may be avoided and for it substituted an honest attitude of frank enjoyment which fits the training and opportunities. Better honestly to like the gaudy car poster which does tell its story and is a good advertisement, to have a real opinion about it, than to be embarrassed by what someone else will think of your opinion. The honest liking for bad design is a basis on which later refinement may be built, for it is an honestly felt reaction. The hypocritical attitude recognizes no basis of genuine feeling and leads nowhere. False standards lead to insincerity instead of to wholesome reactions.

Art education has two perfectly distinct functions. One is to train creators of beauty, the other is to train appreciators and users of beautiful products. In our schools, we are concerned primarily with the education of the appreciators, for the training of the creators is the train-

ing of specialists and naturally follows the former work; it is carried further, intensified, and given mature thought and direction.

This field of appreciation of beauty in common things is one of absorbing interest. Practical, sensible direction in selection of furniture and wall hangings, of costume and its ornamentation provide problems of unbelievable vitality and interest. The users of beauty need practical training in color and design that will give them power to select the color and pattern of the paper for a special room, to choose the drapery that will soften the window frame without cutting off too much light or destroying the structural effect of the casing, and to provide the color accent that will best serve to make a unit of the whole interior. They need training that will help them in choosing furniture that is beautiful as well as strong and comfortable, and in arranging such accessories as lamps and bric-a-brac with an understanding of the need of unity and repose.

Such work can only be successful when the teaching methods are changed from those that fit the maker of designs to those that fit the selector of designs. Studio methods of teaching have no place in this selective process. Real materials must be seen and handled. Color schemes for rooms will have meaning only when the actual materials are used. To discuss color schemes verbally, supply the class with diagrams of rooms, and have these colored with water colors is not sufficient. Too much attention is concentrated on laying on washes, the five finger exercises of the design maker. The attention is on the making of the symbol, not on the concrete problem of the color. Again, the water color diagram seldom represents the actual problem—the texture, color, and design of the material to be used. The student is required to think in terms of generalities before she is even acquainted with the specific concrete possibilities.

The problem of the appreciator is in the store downtown where she looks over a confusing mass of wall papers, cannot make up her mind, describes the room more or less inaccurately to the salesman and takes his judgment, which too often is based on latest designs and style instead of taste. To train the taste of this practical searcher for home comfort who has absolutely no desire to draw, the papers must be brought to her, and she must be taught by contrast to discriminate and select those that will fit the conditions of her home. The draperies must be considered in their real form and not as water color washes.

She does not want to learn to represent them, she wants to learn to select and enjoy them.

In costume work, these users of beauty need the practical training that will teach them to choose costumes suitable in color, fabric, and durability for the individual characteristics and income. They need to become acquainted with their own color possibilities, learn to select styles that are suitable for their individual types of figure.

If choosing color schemes for these costumes is to have meaning it must be done with the actual samples, just as in the case of the wall papers. Painting a paper doll will not teach a girl to choose the particular color of silk to combine with the cloth of the dress. Such procedure is asking her to think in terms of a symbol that she cannot use freely before she has had sufficient experience in handling colors in fabrics to know what she is trying to make the symbol represent. She must have the fabrics themselves to see, she must try them on herself, she must study the real dress and the pattern book. And when she knows the facts, and has reached the stage of expression, her natural symbol is the written or spoken word, not the drawing. Of course, the choice of good color in her own costume is the final test of the value of the work.

The solving of all these problems lies within the scope of any person with a fair amount of sensitiveness to visual impressions, and a little careful guidance by one who has already travelled over the road. Surely there is no need here for the uninspired to struggle in making designs; aesthetic pleasure can be provided for those who have too often thought themselves "inartistic."

Obviously, a course in appreciation that is to give any practical results may employ totally different methods from those we have recognized as studio methods. The teacher must make her standards graphic, must explain them by innumerable illustrations, must give more in explanation herself until she has built up in the pupils a sufficient number of experiences for them to compare and contrast for themselves. Then their reactions should not be in terms of drawing, but must come in definite form in the use of materials, not in a representation of materials through learning a symbol for them. This power of discrimination will always be in excess of their power to create. They need from the design specialists more and better creations which they may use. They do not need to make representations.

Historic costumes are interesting, and their study down through the

years can be left to the specialist who needs that knowledge; but to the average woman, what value to her what the Greeks wore if she picks out from the current fashion book the dress that will make her look twice her natural size? Or if, in her search after the unusual, she combines a green blue chiffon with a purple blue silk, thereby killing the effect of both? Or if with a sallow complexion, she insists on wearing a purple dress which increases the sallowness.

It has been with these thoughts in mind that the writers have been experimenting with a course in Costume Appreciation in the Vocational School for Girls in Somerville, Mass.; not to design costume accessories but to learn to select the dress that is appropriate for the individual, the color that is suited to the individual complexion, and the pattern from the fashion book that can best be adapted to a particular type of figure. The material that is beautiful, the combination of colors and textures to give the desired effect, the proportion and line that must be followed to give the best appearance, these are the practical results which are the right of every woman to demand.

These cardinal points of good taste in costume have been embodied in a course which is proving of intense interest to the girls in this particular school. The work has been assembled in the form of a problem in planning a wardrobe for a given amount of money.

In the first series of lessons, the girls were told that they were to plan the clothes of a woman in moderate circumstances. The wardrobe was to last her for a year. They were to assume that the wardrobe was entirely new, that there were no left-over clothes from a preceding year. This stand was necessary in order to avoid ingenious excuses for extravagance. The different kinds of dresses were discussed from the standpoint of cost, appropriate materials, and style correct for the occasion. Every article of clothing was considered and the girls kept a record of the wardrobe list.

The next series of lessons centered around the selection of two of the working dresses, in this case, the morning dresses of washable material. The girls first chose the color suited to the complexion. They studied the different types of complexion in the class, tested a great many large samples with the different types, and as a result came to some very definite conclusions as to what people with certain color, hair, skin, and eyes, could wear. Then each girl, unaided by the teacher, selected samples and made individual notes upon colors suitable for herself. These proved to be of much interest and indicated very

conclusively that the method had been successful. Out of some 85 girls only two or three made a poor choice. Following the color lessons the materials were studied for their pattern beauty. This was done by means of discussion of a great many samples, good and bad, with gradual elimination of the poor ones, and ultimate selection of two good samples by each student. The cloth for the two working dresses could now be selected.

The next step to consider was how to make the dresses. This involved study of line and proportion and that in turn furnished the problem of types of figures. What could the stout woman wear satisfactorily, the thin woman, the medium sized woman, the short waisted woman? Accordingly, the teacher made large pasteboard dolls having these different types of figures, and dresses were made for the dolls which showed contrast of good and bad design in yokes, tucks, ways of making skirts and placing trimming. These were discussed in detail, and notes made on the different designs to use with each type of figure. The test for the efficacy of this instruction was given in two ways. First, by each girl choosing one or more styles from fashion books, pasting them in her note book, and suggesting such modifications of the selected patterns as would make them suitable for the different types of figures, of which she had small reproductions in the large dolls. Secondly, by each girl choosing the style for her own dress according to her own type of figure. This work was made more vital by the paper modelling of patterns carried on at the same time by the teacher of dressmaking.

The next costume, the afternoon frock, embodies three new points: what fabrics to put together, what colors to harmonize in different fabrics, and what proportional amounts of color to use. The ability to decide on the color qualities to be used together is none too common, and girls need much training in this kind of selection. Working with color charts did not seem the right approach; it was too indefinite and too general. It was decided that practice in matching and selecting from a large supply of samples was needed. Accordingly, different typical colors such as light blue, bright blue, and dark blue in various fabrics were gathered with the assistance of the textile teacher who also supplied correlated work on durability and prices. After deciding on the kind of material to be used for trimmings, the girls were given much practice in choosing the right quality of color in this chosen fabric. From these concrete experiences were assembled general prin-

ciples of color mixture regarding enhancing, neutralizing and modulating effects of different colors on each other. As a final test of the power gained, the girls selected samples of materials and combined them in a dress made for a doll. The material was simply cut out and pasted on the flat doll which had been supplied by the teacher. This, of course involved also the choice of proportion of different colors, and was treated by means of discussion of actual dresses, of colored plates, and large paper dolls dressed in fabrics. In this case the use of the paper doll has a real place, for the students looked at her only for color spotting. They did not have to draw the figure, as that was done by the teacher. Moreover by this time they had handled a sufficient number of fabrics, and enough fashion plates, for the symbol to have meaning. All of this involved repetition of the work given earlier in the course.

Work carried on in this way means much more for the teacher than by the ordinary methods. She must spend many hours gathering her samples, mounting them, making her large dolls and their dresses; and finally, in the class room, she must make herself such a guidebook of ways to look at patterns and colors that the girls easily follow her lead. The class criticism of the material must be preceded each time by her own analysis and explanation in terms that will make the girls see and feel what the lines are doing to their eyes. To sit back and ask these children why one design appeals to them more than another is quite useless. Better to take one good design, point out the elements that make it pleasing, and contrast it with one from which such a reaction is impossible. By the time that the teacher has done this with three or four designs some kind of standard has been established and the girls are ready to look at the new designs to see if they can find some of these same pleasing elements.

This course can be extended easily to meet the needs of upper grammar and high school pupils who are not interested in drawing. It is planned primarily for the purpose of bringing enriched aesthetic experiences within the reach of the many people to whom the manual operations of drawing are of little interest.

A CONTEST AND THE TALES IT TOLD

ANNA MERRITT EAST

New Housekeeping, Editor of the Ladies' Home Journal

"The best argument against woman's suffrage is the woman's page in the daily newspapers," brought me up with a start one day in New York and immediately I set out on a new tour—this time among the women's pages and home departments of newspapers and magazines. What did I find? Many interesting things and many astonishing "facts," such as "put the milk on in a double boiler and *boil*," "all tea and tablespoons are rounding measurements," "raisins are a fair substitute for meat, they are rich in sugar, and, considering the value they possess, they are one of the cheapest articles on the bill of fare," "oysters are fat and very nutritious."

Then I asked the question, "Why are not women trained in Home Economics doing more of this writing?" "Why don't you try your hand at it?" Sometime afterwards, I was called to take up my present work, and had the opportunity of arranging a contest, in order to see whether the technically trained domestic science student or worker was really interested in this particular use of her training—to aid those not so fortunate as herself in having had the time and opportunity to devote to the mastery of both the theory and practice of household problems. In fine print on a back column of the November *Ladies' Home Journal* was announced this contest offering prizes for articles under three hundred words on the following topics: A Happier Method of Accomplishing an Old Household Task; A Household Superstition From Which I've Gained My Freedom; A Discovery I've Made in Food Preparation; My Suggestions for Improving Domestic Science Instruction.

Although *Ladies' Home Journal* contests usually bring in responses by the thousands, this, because of its technical limitations, brought in but three hundred and thirty-four articles. However, when those for which we had room had been edited, they brought forth the following interesting comment from our editor, Mr. Bok: "I don't pretend to know whether these 'discoveries' will hold water, but if they are all O. K. from a practical point of view, they certainly sound all right from a journalistic standpoint. It seems to me to be good stuff." This being true of about 50 per cent of the material submitted, it points out another great field of work for our girls who are taking Home Economics courses, for it is a

field that has been scarcely scratched on the surface by writers who have also a technical background.

Of the three hundred and thirty-four articles received, forty-three came from the Iowa State Agricultural College at Ames, where the Home Economics Division and the Department of Journalism had both recognized the need of getting together by giving a course in journalism to Home Economics girls. Only six girls had registered for this work last fall, but when the *Journal* contest notice came out, Professor O'Brien said: "Now is our opportunity to get some of our articles into a big magazine where unknown writers usually have but little chance." (Not true, however, for here, as elsewhere, we are always on the lookout for a new writer who can produce effective copy.) So, for the four or five weeks before the closing of the semester, this class devoted its time entirely to *Ladies' Home Journal* stories, and Ames gained the distinction of handing in as many article as any three schools together and carrying off six of the prizes. This is interesting, but the vital thing was what came out of it, for forty-five girls registered for this course in the second semester, and two are now regularly contributing to local papers.

Teachers College, Columbia University, came next in the number submitted—twenty-two—and carried off seven prizes; again a school where there is active coöperation between the household arts and English instructors, and where at least one of the household arts instructors made a class-room problem of the contest subjects.

The following are the schools which took the most active part:

SCHOOL	NUMBER SENT	NUMBER PRIZES
Iowa State College	43	6
Teachers' College	22	7
University of Chicago	11	2
University of Wisconsin	10	
Drexel Institute	8	3
Drake University	7	
Pratt Institute	6	2
Kansas Agricultural College	6	3
Illinois State Normal	6	
University of California	5	2
High Schools	30	4

The time is ripe for the more definite training of popular writers on our Home Economics problems. Do we not owe it to the public to give them facts that *are* facts?

A HOME ECONOMICS EXHIBIT

ALICE McCONE

On December 3 the Home Economics Club of Montana State College at Bozeman fittingly honored the birthday of Ellen H. Richards by giving an exhibit of antiques, including jewelry, china, needlework, lace, samplers, wearing apparel and war relics. We had on display, near the entrance, Ellen H. Richards' picture and many of her books. A member of our club told the guests the purpose of the exhibit and something of the life and work of Mrs. Richards.

The women of Bozeman very kindly lent us their most cherished antiques. Exhibits from various parts of the state were sent, in response to the notices sent to the newspapers. One woman sent a collection of rare old china which dated back almost two hundred years and also a hand-woven coverlid with the date 1672 woven in the corner.

The hand-woven coverlids were exceptionally fine, almost all of them having been made during early national times. There were caps of fine colonial needlework, in which the tiny tucks were wonderful. Head coverings of various styles and periods, from the tiny hats to the calash, were among our collection. Of the many queer umbrellas sent, one, a square one, was more than one-hundred years old.

There were some daguerreotypes over fifty years old and an old account book, the exact age unknown, containing the record of a purchase dated 1715.

We put the dresses on a number of dress forms and they illustrated styles from the colonial period until the present. The wedding garments of several great-great-grandmothers attracted much attention. We had several pairs of wedding slippers and one shoe about one hundred and twenty years old.

Some of the club members were dressed as Puritan maids. One maid dipped candles, another wove a rug and another carded wool. To defray the expenses of the exhibit, we served tea and wafers to the visitors.

THE TEACHING OF TEXTILES IN ELEMENTARY SCHOOLS¹

KATHARINE FRENCH STEIGER

Supervisor of Domestic Arts, Public Schools, Rochester, N. Y.

The teacher of household arts has never before had such an opportunity as now presents itself in our great cities and in rural communities, if she can free herself from her own preconceived ideas and throw into the waste basket the course of study that was useful in its day but is no longer worth while.

I quote from Miss Kinne, professor of household arts education, Columbia University. The same might be said not only of the household arts teacher but of every teacher, academic, special or grade, who has to deal with the girl. The problem is here—the girl is here—the opportunity is here. The industrial awakening and the necessary adjustment of courses of study call for coöperation on the part of the grade teacher as never before. Colleges and secondary schools have done much within recent years along the line of household arts—but colleges and secondary schools, no matter how excellent their curricula, how complete their equipment, or how strong the teaching force, cannot reach the vast number who through mental limitations or financial stress never get within their doors.

It is claimed that 90 per cent of our school population will support themselves by work of hand while only 10 per cent will go to college. Of those entering the high school only 25 per cent remain to graduate while 50 per cent of the children enrolled in the elementary schools drift out into the world before completing the sixth year of instruction. In a city in New York state, one school alone registers one hundred and twenty-three girls from one to five years below the grade requirements. Similar conditions exist in other schools, other cities and other communities. This class of pupils the secondary schools seldom reach, and with those that are reached the work is handicapped unless the graded schools furnish a substantial foundation of rudimentary experiences for the more advanced courses of the high school and college later on. Here is a rich opportunity for the teacher of elementary subjects. "Down from the kindergarten to the college," as one educator aptly expresses it.

State Superintendent Draper once said, "We must teach each child a

¹ Presented at the Eighth Annual Meeting of the American Home Economics Association, Seattle, 1915.

few definite things well no matter at what age she may leave us." To teach a few definite things well a good foundation is necessary. Needle work in the grades is not a technical drill in stitches only, but a course of well defined, carefully thought out fundamental principles. When the great Cathedral of St. John the Divine was planned tons of cement were poured into the fissures of its rocky foundation. This was necessary in order to insure the permanence of the superstructure. Are we as teachers and directors of household arts using enough educational cement to guarantee that there will be no social and economic fissures in our domestic structure? The girl who leaves us must know not only how to sew by hand and by machine, but how to plan, what to buy and what not to buy. As soon as she begins to make an article for actual use or a real garment her attention should be called to the nature of the material handled, its name, its desirability, its suitability and its cost. So long as the needle exercise in the grades is limited largely to the drill in stitches, the worker taking little or no part in the selection of materials, so long is the domestic arts structure lacking in educational foundation.

In the elementary school textile discussions or a few simple practical tests can be made a part of each sewing lesson. These will require about five minutes. If the children have provided their own materials as they always do in the Rochester schools, a comparison of the textiles purchased is a good beginning. To distinguish the chief characteristics of cotton, linen, wool and silk manufactures, the clothing worn by teacher and pupils will be a sufficient equipment for one day's lesson. Their ribbons, gingham, lawns, linen and cotton suitings, coats, collars and neckwear can all be examined briefly. The laundering of delicate fabrics, the detection of fast and fugitive colors, the effects of sunlight and alkali soaps can be tested easily in the school room or cooking center by means of small pieces of dress stuffs. The selection of a pattern for a school dress can be made in the class room also—small sheets illustrating desirable styles are furnished gratuitously in all department stores. By means of these sheets the planning of a girl's dress and an estimate of its entire cost is within the power of the average pupil. Farther on, the necessity for sponging cloths, variations in shrinkage and the dangers of gasoline and other dry cleansers can be made an important part of one term's instruction. In case the girl goes no farther than the sixth year, there should be included in her work the simple forms of experimentation which will prepare her for action when she is confronted with

similar problems of purchase later on in life. She should know a few definite practical things well and how to spend her money wisely as one of them.

For this type of girl the advanced physical and chemical tests of the college would mean little. She is not even ready for careful microscopic work and will probably never possess a microscope to use when one is needed. If, however, these simple exercises of the grades have trained observation and quickened judgment, an excellent foundation has been laid for future microscopic, physical and chemical tests should she be fortunate enough to have access to textile courses in schools of secondary rank later on.

In outlining a textile course for the elementary school I am not unmindful of the serious handicaps which confront the grade teacher and the supervisor in every well-organized school system—the crowded curriculum, the limited allotment of time, the many unlooked for interruptions, the shifting of pupils, and the over-large class. While the best a teacher of the grades can do is only a feeble attempt at what might be done under more favorable conditions, I believe that merely breaking ground for future habits of careful thinking and planning is well worth while. The girl should know a few definite things about her clothing, no matter at what age she may leave us to drift into business life, or into a home where there is no time for enlightenment even if the tired mother be competent to furnish it.

Before submitting the textile course used in the Rochester schools I should like to sum up briefly the points made.

a. Every girl before leaving the public schools should have some acquaintance with the textile materials which she has used in the sewing exercises.

b. If she attempts to make her clothing this knowledge will help her to buy wisely; if she purchases the ready-made garment, such knowledge is even more essential.

c. The large percentage of girls who drift from school into the industries below the sixth grade have no way to secure a textile training except through the graded school.

d. A practical knowledge of textile values can be given this class of girls by the grade teacher in connection with the sewing lesson. The more advanced physical and chemical tests which belong properly to the college and the secondary school need this foundation.

e. We cannot buy taste and judgment, but to a certain extent they may be developed by training.

f. The small amount of time allotted for the sewing exercise need not be a serious burden as the textile drill requires only a few minutes of each lesson.

g. From its beginning the domestic arts course should emphasize fundamental principles rather than stitches.

PLAN OF THE DOMESTIC ARTS WORK IN THE ELEMENTARY SCHOOLS OF ROCHESTER, N. Y.

A school year consists of 40 weeks.

Extending from the fifth through the eighth year sewing is taught two and one-half years and cooking one and one-half years.

The average time for each lesson is one and one-quarter hours per week.

Twenty-eight weeks per year are allowed for plain needlework.

Ten lessons per year aim to train the taste through an exercise in applied design, each pupil making one design.

Two periods during the year are sufficient for the preparation of the textile chart. This chart is intended to fix the knowledge gained through class discussions, language lessons, and written notes in connection with the sewing done. Language lessons and written notes are a part of the general class work.

Study of materials

Grade 5-B. Samples of cotton, linen, wool or silk, also price.

Grade 5-A. Samples of materials, suitable for children's garments.

Grade 6-B. Samples of colored fabrics washed and unwashed.

Grade 7-B. Materials suitable for a school dress, also entire cost.

Grade 8-B. Shrinkage of fabrics, and related problems.

For the chart exercises the backs of discarded drawing pads are used as a foundation. After a class discussion, pupils paste their cloth pieces, raw materials and any necessary statements relating to cost, width, special name, etc., upon this card. For instance, pupils in grade 5-B are learning to distinguish cottons, linens, woolens and silks at sight. They begin by observing the materials used in their own clothing and that of the teacher. Cottons and woolens are used for school

dresses rather than linens and silks—why? Silk is used for hair ribbons—why? Linen for collars, cuffs and shirt fronts—why? The danger of using outing flannel for children's clothing—why? The difference in cost of the four textile materials—why? After this training through observation and discussion, the materials brought from home are used in making a chart. This chart has no use except as a concrete evidence that the child understands.

Grade 5-A goes one step further and considers the characteristics of each textile used—advantages and disadvantages of cottons and woolens, linens and silks—What makes cotton goods desirable in a sick room, linen for the table and so on.

Pupils of Grade 7-B make use of the free fashion sheets to select a style of dress suitable for school use. This is pasted on a card, with sample of the materials needed, and a bill showing quantity and cost.

In grade 8-B the materials used in making a piece of underwear are considered from the standpoint of durability, suitability and cost. Here emphasis is placed on shrinkage, the advantages of white linen tape over lingerie ribbons, and the need of care in selecting lace and beading.

The effects of very hot water and soap on woolens are also tested.

INEXPENSIVE RESTAURANTS IN CHRISTIANA AND IN VIENNA, AND A SHOP-GIRLS' RESTAURANT IN COPENHAGEN

COMPILED BY HELEN W. ATWATER

U. S. Department of Agriculture

One of the English reviews¹ contains an interesting article by Edith Sellers, with the title "Experimenting in Cheap Catering," which describes two low-priced restaurants or food shops, one in Christiana and one in Vienna. The Norwegian establishment has been gradually developed since 1857, when a group of business men started a restaurant to provide wholesome food for laboring people at a price which should pay the total cost of buying, preparing, and serving the food plus a rea-

¹ *Nineteenth Cent. and After*, 76 (1914), No. 453 (Nov.), pp. 1123-1137.

sonable return on the capital invested. It was not a success until a department was introduced for the sale of food, both raw and cooked, to be consumed at home. This made possible the purchase of all supplies at wholesale rates. Since then the patronage has steadily increased until over 1500 persons get their dinners there, 700 go to the cooked-food department and several hundred others take minor meals in the café or purchase uncooked provisions. These numbers are especially significant as Christiana has a population of only 24,000.

The restaurant serves three types of meals in separate rooms. *Table d'hôte* dinners are served at noon in the dining room at 13.5 cents and at 9 cents according to the combination of dishes, the portions in either case being ample. The café and the lunchroom are open from 8 a.m. to 10 p.m., and in them the service is *à la carte*. The quality of the food and service and the prices in the café are slightly below those in the lunchrooms, though in both they are wholesome and clean.

The People's Kitchens in Vienna have been in operation since 1872, and have served as the models of the Alexandra Trust Dining Rooms in London, and similar organizations elsewhere. They now operate restaurants and food shops all over Vienna and serve low-priced, well prepared meals to 22,000 persons daily, besides providing 5420 lunches for school children and selling food to several thousands who eat at home.

They serve two *table d'hôte* dinners, one at 14 cents and one at 10 cents. The two consist of the same quality of food; the more expensive one including a basin of soup with thick slices of bread and a large plate of hot veal, mutton, beef, or pork, with vegetables; the less expensive one consists of one course only, shepherd's pie, Irish stew, fish, sausage, or something of that kind. Both dinners are said to be as abundant as any "big, strong hand worker" could eat.

Menus and Price lists from People's Kitchens, Vienna

	Cents.
Clear soup.....	1½
Spinach.....	1½
Beef with spinach.....	6½ or 3½
Venison with macaroni.....	6½ or 3½
Fruit pudding.....	3½
Vegetable soup.....	1½
Peas.....	1½
Beef with peas.....	6½ or 3½
Pork cutlets with salad.....	6½ or 3½
Ginger pudding.....	3½

The business, which is entirely self-supporting though managed by a philanthropic association, is so organized that it can at short notice cater to 10,000 more than the regular patrons. The association is called on in emergencies, such as inundations, epidemics or other disasters in any part of the country, to take charge of the feeding of the district affected and is able to respond immediately to such demands.

In another article² published about the same time, Miss Sellers gives a very brief account of a shop-girls' restaurant in Copenhagen. The establishment described is in the heart of the business center of the city and it serves low-priced meals to from 1200 to 1800 shop girls, besides selling some cooked food. It occupies two floors of a large building, the lower devoted to *à la carte* service and the upper to *table d'hôte* dinners. Each floor contains also sitting and dressing rooms where the patrons may rest, read, or sew. The rooms are all attractively furnished and the friendly atmosphere is further encouraged by the matrons who supervise each room. The waitresses are young women of good breeding. Men are not allowed in the lunchroom but may be brought to the dining room as guests of women patrons, a form of hospitality said to be very popular. The proceeds are sufficient to cover all expenses, including rent and reasonable returns to the two women who have been entirely responsible for the management, but they do not allow of further profits.

Bill of fare, Copenhagen, April 6

	<i>Cents</i>
½ roast ptarmigan with baked potatoes	15
Boiled chicken with mashed potatoes	15
Boiled or fried plaice	13
Veal cutlet	15
Game patties	11
Braised calf's head with vegetables	10
Boiled veal	10
Beef balls with celery sauce	8
Leeks with whipped butter	7
Bouillon with egg	7
Bouillon without egg	4
Rhubarb porridge with cream	6
Apple porridge with cream	6
Rice with stewed cranberries and cream	4
Wine jelly with custard	4
Oatmeal porridge with milk or fruit	6
Oatmeal soup with milk or fruit	4
2 fried eggs with bread and butter	10
Cold meat, smoked salmon, sliced eggs, etc, with bread and butter	11

² *Cornhill Mag.*, n. ser. 37 (1914), No. 221 (Nov.), pp. 656-665.

To what extent the war which broke out soon after Miss Sellers' articles were written has affected these successful efforts at low-priced catering, it is impossible to say, but it seems probable that in times of such unprecedented social and financial strain as all the nations referred to are going through, any establishment which is organized to provide good food in a truly economical way would prove exceptionally valuable. Since the Viennese Kitchen had previously done emergency work, they have in all probability also done their share in the special war relief of which Austria has had so much.

THE FUNDAMENTAL BASIS OF NUTRITION

A third printing of this book¹ offers an opportunity that we are glad to embrace to call it to the special attention of those who wish to obtain in brief form an authoritative statement on the subjects included.

The book gives a short historical review of the growth of knowledge regarding nutrition and presents the subject of nutrition from the standpoint of the fuel and protein needs of the body. In this connection attention is given to dietary habits in different countries and to the deficiency disease, beri-beri. Much information is given concerning the monetary value of foods.

Information is summarized regarding the basal heat production of the body and the increases in this due to the ingestion of food, sitting up, walking, and exercising vigorously, as determined by calorimetric measurements, and the author discusses the food requirements of the body under different conditions as indicated by its heat production.

As regards the protein needs of the body emphasis is laid on the relative physiological value of the different proteins with especial reference to the amino acids which they supply to the body. Thus the amino acids necessary to build new body proteins are present in the proteins of meat, milk, eggs, and fish, but are absent in proteins like gelatin or zein. It is also stated that "when the units are in a very different ratio to one another

¹ *The Fundamental Basis of Nutrition*. G. Lusk, New Haven, Conn.: Yale University Press, 1914, pp. 62. Reprinted 1914 and 1915. Price \$0.50.

from that in which they exist in body protein, they must be of inferior nutritive value, since large quantities must be broken up in order to yield that quantity of certain units necessary for the construction of animal protein. Such inferior proteins occur among the plants. Plant proteins are eaten by the ox and are reconstructed into beef proteins, with the oxidative elimination of the excess of chemical units which are unnecessary for the structure of the animal cell. In this way beef protein attains a higher biological value for the nutrition of man than is possessed by vegetable proteins." Owing to differences in their amino acid make-up the amount of different proteins which must be eaten to protect the body from protein loss varies; about 30 grams of meat or milk protein and as much as 76 grams of bread protein or 102 grams of Indian corn protein being required.

The author calls attention to the power of protein to increase greatly the heat production of the body by stimulation, stating among other things that "individuals maintained on a low protein diet may suffer intensely from the cold. A good piece of beefsteak or roast beef will put the heat production on a higher level, and a person going out of doors on a cold day after a meal high in protein does not feel the cold. For the same reason, on a hot summer day, meat will be avoided."

One chapter is devoted to the diversity of dietary habits in different parts of the world, attention being called to the diet of the Eskimo, which at times contains as much as 9 pounds of meat per person daily, the low protein diets of the inhabitants of India, China, Japan, and the Philippines, and the standard European diet of Voit.

The author emphasizes the importance of considering the cost of foods in relation to their nutritive value and much information is given regarding the cost of nutrients as furnished by different food materials and in the final chapter data collected by F. C. Gephart regarding the cost and nutritive value of the portions of various foods sold from the counter of a well-known chain system of restaurants in New York and other cities are included which serve to emphasize the extreme variability of the purchasing power of money when expended for food. In general, the author proposes that foods should be sold on the basis of their energy value and of the proportion of the total energy contributed by proteins. "The proteins of the foodstuffs should be labeled A, B, and C according to their physiological value, and to group D might belong gelatin and some other proteins which can not replace the body protein that is continually wearing away." The relative value of different

proteins, as determined by the products which they yield on hydrolysis, as well as other recent work on the nature and functions of protein, are discussed.

As the author points out, "since the efficiency of labor depends upon its [i. e. of the body] energy and constant repair, it is certainly of no small moment that the citizen should know how best to maintain the machine at a maximum of efficiency. Not only that, but in times of trouble he should know where to turn to find nourishment in the form which is best and cheapest. . . . If, through the medium of the schools and the press, everyone knew that a man of sedentary occupation required 2500 calories and a laboring man 3000 calories and more, no one suffering from want would spend his money for a can of tomatoes which is little else than flavored water.

"It has been estimated that a family of 5, including the father, a clerk, the mother who does the housework, and 3 children, 9 and 6 years and 1 month old, respectively, requires 7750 calories per day." Data are presented showing the cost of a diet sufficient to supply this energy, 5 per cent of the total coming from animal proteins of grade A and 10 per cent from vegetable proteins of grade C (bread). The necessary protein to supplement the bread would be supplied by four-fifths pound salt codfish, three-fifths pound smoked ham, four-fifths pound cheese, two and one-half pounds milk, one and one-half pounds loin pork, one and one-third pounds of mutton, one and one-fourth pounds cod steak (fresh), one and one-third pounds sirloin beef, or one and one-half pounds turkey. According to the prices of foods in the New York markets January 28, 1913, the cost of the ration would vary from 47 cents with bread and salt codfish to 78 cents with bread and turkey.

"If corn meal, oatmeal, dried beans or rice had been used instead of bread, these prices would have been lower, whereas potatoes would have slightly increased them.

"These figures are for the great staples of diet. . . . It is obvious that when more than an average of 8 cents is expended for 1000 calories of nutriment, the diet must include luxuries."

The author estimates that three servants will double and six servants treble the food bill given above. "Whatever is spent above these amounts is paid for waste or for nonessentials in the form of flavors of high price. High cost may also be due to carnivorous indulgence approximating that of the Eskimo. . . . It is not probable that the food values actually consumed are very different in the various well-nourished families. Only the cost can vary enormously."

PASTEURIZATION AS A PUBLIC HEALTH MEASURE

C. E. HILLIARD

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Foods of animal origin that are consumed in the raw state must be reckoned among the important distributors of disease. . Whatever the art of cooking may contribute to flavor and digestibility of foods, it is preeminently a health measure. Prof. William T. Sedgwick goes so far as to say that "probably the greatest sanitary step ever taken was the application of high temperatures to the preparation of food." When we consider that the primary source of disease germs is the animal body, chiefly the human body, it is not difficult for us to picture the way in which germs travel from person to person within or upon the unsterilized vehicle, food. It is true that many of the bacteria will survive prolonged heating at cooking temperatures, but, fortunately, almost none of the pathogenic organisms exhibit such resistance.

Milk was certainly intended by nature to be consumed in the raw state, but in the natural order of things the source of supply and the consumer were very close together. Nothing can ever rival breast-fed milk as a perfect pure food for infants. As man has commercialized cow's milk, however, the pure comparatively germ-free product becomes exposed to all sorts of contaminations. The market has been driven further and further from the source of supply, and the number of persons coming in contact with the milk, the different containers it must pass through, and the time consumed in its transportation have all contributed to its germ content potential disease germs, and have made it a very questionable food product, especially in large cities.

Picture, for example, the difficulties involved in protecting a supply like that of New York City; literally a vast river of 2,000,000 quarts of milk, coming from a radius of 400 miles, arising from 44,000 sources situated in seven different states, flowing into a number of huge reservoirs which serve as the centers of distribution within the city. Constant supervision of such an area is almost impossible.

It is impractical to try to estimate how many people are employed in handling this supply, but it is certainly in the hundreds of thousands. One person in every three or four hundred of the average population suffers each year from typhoid fever, and so each year it is highly probable that some of this supply comes in contact with incipient cases of this disease. Add to this danger the more serious menace from the

typhoid germ "carrier," i.e., the healthy, unsuspecting harbinger of the disease germ, and we begin to realize why we so frequently see accounts of milk-borne epidemics of typhoid fever in the newspapers.

The danger from tuberculosis is twofold; the cow, as well as man, is a source of tubercle bacilli. The former will in time be effectively controlled by eliminating the tuberculous cattle, but it is more difficult to protect against infection by human beings.

Other diseases that may be transmitted by milk are diphtheria, scarlet fever, epidemic sore throat, and various intestinal disorders of infants and children. The above list is not complete, and if we could take the space to give some figures on the amount of sickness and death caused by the drinking of raw milk, no one would doubt the potential danger lurking in the opaque and apparently pure fluid. Thanks to the advancement of science, the day of unheated milk as a food product in America is rapidly passing.

It was about 1870 that Louis Pasteur, studying the causes of deterioration of wines and beers, discovered that the cause of these "diseases" was living microorganisms, and showed that they might be destroyed by subjecting the liquors to the temperatures of 158° F. to 176° F. for a few minutes. The process was called "pasteurization" for the great man who originated it. The term now usually refers to the practice of partially sterilizing milk by heating it to temperatures well below the boiling point of water, and cooling it rapidly to 50° F. or lower.

The application to milk was first tried in Denmark to improve the flavor of butter and to prevent tuberculosis developing in calves to whom the skimmed milk was fed. It was next employed secretly by dealers to enhance the keeping qualities of milk. It was looked upon with disfavor by health officials who believed that it was simply a way of concealing careless production and handling.

With the growth of knowledge of the sources and modes of infection, and especially of the role of milk, a few sanitarians advocated pasteurization as a public health measure to be applied to large city supplies, and, although they met with serious opposition which came, curiously enough, from the medical profession, today the practice is so well recognized that we find it used as an advertising asset by many milk companies, and official regulation is requiring the heating of all milk except the very highest grades. In New York City 99 per cent of the entire supply is pasteurized, a condition the more remarkable since five years ago only 7 per cent was heated. In 1913 the amount had risen to 75 per cent of the total. In 1913, 80 per cent of Boston's daily supply of

390,000 quarts was pasteurized, and similar figures might be quoted for many other large American cities.

This progress has not been made without serious opposition and does not go unchallenged even today. Physicians claimed that heated milk caused rickets and scurvy. Perhaps the final word has not been said on this point, but the evidence does not support the charge. Rickets seems to be a disease of defective alimentation, while scurvy is remedied by giving with the food the juice of fruits, as orange or pineapple. The claim that malnutrition follows the use of this food by infants and children lacks evidence unless we take occasional exceptional instances.

Pasteurized milk is recommended today by most pediatricists especially in the summer time, and we find that most of the milk dispensed at the baby milk stations is heated milk. Nathan Straus began distributing pasteurized milk to babies in New York City in 1893. The first year only 34,000 bottles were distributed, while in 1906 the amount had risen to 3,140,252 bottles. The results more than justified the experiment, and now the gospel of safe heated milk versus questionable raw milk has spread through the land.

A comparison of what baby will do on the two kinds of milk is given by Mr. George M. Oyster who has distributed milk in Washington, D. C. under careful medical advice. There were three groups of babies; one using raw milk, one pasteurized milk, and a third using pasteurized and raw milk intermittently. In the first group of 351 babies, a net gain in weight per baby per day of 0.4030 ounce was shown. The 557 babies using pasteurized milk gained in weight an average of 0.4077 ounce, showing an excess over the first group of 0.0047 ounce per baby per day. The third group used raw milk part of the time and pasteurized milk part of the time. All the other factors remained the same. While on raw milk each baby gained 0.4312 ounce, and during the time they used heated milk, gained 0.4607 ounce per day, or an excess in favor of the pasteurized milk diet of 0.0295 ounce per baby per day.

Some other interesting data on the relative merits of raw as compared with heated milk for children is found in the case of the death rates in New York among young children in the city's care. The milk used throughout came from a selected herd. During the three years 1895-1897, 1509 deaths occurred among 3609 children while using raw milk, or 41.8 per cent died. With no other change except the introduction of pasteurized milk, between 1898 and 1904, 1349 deaths occurred among 6200 children, or 21.75 per cent died. These figures speak eloquently for the use of pasteurized milk for babies and children.

Much of the opposition to the practise of pasteurization has arisen because of the results obtained by the early workers using considerably higher temperatures than are now known to be necessary. Boiling milk, or even heating it to 160° F. or above, will affect the physical and chemical properties of milk detrimentally, destroying the cream line (the chief asset the purchaser demands), scorching the milk sugar, altering the casein and albumins, and precipitating various salts. Such changes impart a cooked taste to milk and may make it less digestible or perhaps may remove or render unavailable certain essential accessory substances. The evidence in regard to the value of boiled versus raw milk in infant feeding is still inconclusive, although we have apparently overemphasized the importance of the changes induced by high temperatures.¹ It is not necessary to use such high temperatures to obtain the desired result, nor is it recommended.

Another objection, and perhaps the most important one, has been that heated milk will subsequently putrefy instead of undergoing the normal souring process. The putrifying bacteria are, as a group, more resistant than are the lactic acid bacteria, but still they do not all succumb, as was supposed, to pasteurizing temperatures. Very exhaustive studies by the United States Department of Agriculture,² have shown that milk properly pasteurized will go through exactly the same series of changes that high grade raw milk will undergo. When heated to 145° F. for thirty minutes, 98-99 per cent of all the bacteria will be killed. The minority left will be representatives of a great variety of different kinds of bacteria, including some of the acid-producing varieties which flourish in the milk if it becomes warm. Absolutely no disease producing bacteria that could find access to milk can resist this temperature for this period of time.

The claim has been made by some from the outset that pasteurization will become a substitute measure for cleanliness, and that all our campaign for clean milk will go for naught. If this were true, it would be sufficient reason for abating the practise, but it is not the claim of the pasteurization advocates that it is a substitute for cleanliness, but that it is an extra safe-guard. Dirty milk cannot be made clean by heating, even though it can be made safe, and no one has a relish for barn yard

¹ U. S. Dept. of Agr. Bur. Animal Indus. Bul. 126.

² Lane-Clayton. Report to Local Gov't Board of London, vols. 76-80.

N. S. Davis. Food in Health and Disease, p. 75.

J. H. Castle. Hygienic Laboratory Bul. 56, p. 332.

McCollum and Davis. Jour. Biol. Chem. (1915), p. 233 and pp. 249-251.

dirt, even if sterilized. The practise has been likened to our present methods of providing safe water. Everything possible is done to protect the watershed from pollution, but since this measure is imperfect, the water is filtered or treated before it goes to the consumer. The supervision of the "milk shed" is of necessity imperfect, and so a safety guard is imposed.

Our measures of supervision should be extended rather than relaxed, and should cover not only the source of production, but also the efficiency of pasteurization, for it is a scientific process that cannot be left to individual caprice.

There are three general methods of pasteurization; the flash process, the holder process, and heating in the bottle. In the former method, the milk runs into a container and is rapidly heated to a high temperature, about 178° F. usually, by coming in contact with a hot water jacket or with coiled pipes heated by water. It remains at this temperature for only a brief period, and is then withdrawn and rapidly cooled and aerated by running over cold pipes. This method is not as efficient nor as reliable as is the holder process.

In the holder method the milk is first clarified by filtration and centrifugalization, and then it runs into the heating tank where it reaches the desired temperature—140° to 158° F.—and from there it flows into the holding tank where it remains for a time, depending upon the degree of heat used. At least three minutes is recommended for the highest temperature, and thirty minutes for the lowest. The usual temperature is 145° F. for from twenty to thirty minutes. In large plants, the time of holding is controlled automatically, and the milk then flows back toward the source of raw milk where it flows around pipes containing the incoming cold raw milk. The hot milk is cooled and the cold milk is warmed, and so a great economy for the producer is effected. When cooled and aerated, the milk is bottled automatically, and is capped by a machine, so that it never comes in contact with the operators, except for inspection of the caps, which occasionally are improperly sealed.

Pasteurization in the receptacle for delivery approximates a perfect method. In this case the milk is bottled and sealed with a special tight cap. It is then put in a special chamber and a thermometer recording automatically on a disc is inserted into the middle of one of the bottles so that the temperature of the milk and not of the chamber is taken. The milk is gradually heated to the desired temperature by an increas-

ingly hot shower of water or by other means, is held for the proper time, cooled in the container, and then iced ready for shipment.

Many modifications of the above described methods exist, and the apparatus is constantly being perfected. The prime requisites are always the same: To heat the milk rapidly to the desired point; to provide for maintaining this temperature; to chill promptly; and to avoid to the greatest degree possible, the handling of the milk or the bottles after being heated.

A discussion of pasteurization would be incomplete unless mention were made of the economic aspect. Besides being a public health measure it is a food conservation measure, as it postpones deterioration of a valuable food product by reducing enormously the initial numbers of the acidifying and decomposition organisms. Pasteurized milk will remain pure and wholesome for a long time if it is kept constantly chilled, and so it results in a saving to producer and to householder.

On the other hand, it costs money to install and to operate a pasteurization plant as well as to maintain a good quality of milk coming to the plant. Pasteurized milk costs more, but the extra expense is more than compensated by reduction of the doctor's and the undertaker's bill. The farmer is complaining today because he does not make a living out of a dairy herd, but it is not, as many people think, because the distributor is taking all the profits. "Public health is purchasable," within certain limits and we, the public, must pay an extra cent here and there to have it guaranteed us.

The practice of pasteurization has passed the experimental stage and is here to stay as a part of our new sanitary enlightenment. It is not an attempt to mask dirt in milk. It is good food for babies who cannot have breast milk, and for children; it is economy to buy it and to save in doctors' fees; and finally it makes clean milk a safe food.

FOR THE HOMEMAKER

FOOD SELECTION FOR RATIONAL AND ECONOMICAL LIVING

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The following is part of a paper given by Dr. Langworthy at the meetings of the American Association for the Advancement of Science in Columbus, Ohio, 1916, and later published in the *Scientific Monthly* for March, 1916. With the permission of the *Monthly* the JOURNAL is including the whole article among its reprints. We hope that not only housekeepers but teachers as well may be so interested in the extracts given here that they will send to the JOURNAL for the whole article.—THE EDITOR.

There are a number of factors which should be taken into account when one discusses diet with reference to its adequacy and economy and to the satisfaction which it gives. Among these are a knowledge of local markets and standards of food quality; wise selection of food; preparation and cookery; and the planning of meals, or, as it is so commonly called, "menu-making."

By a knowledge of markets is meant not only knowledge of the location of butchers, grocers and other dealers in food in one's neighborhood or town, but also a good idea of the reliability of the different dealers, the quality of the goods which they offer, the relation of the cash or credit systems of selling to their prices, and other such things. To be complete it should also include some understanding of the production and distribution of food materials; such information, for instance, as would lead the housekeeper to purchase local-grown goods when possible, not only because they may be fresher, but also because of the difference in their favor of transportation charges and hence of price. With respect to the quality of foods, the housekeeper should know, for instance, how to distinguish old and young poultry, and tough, overfat or overripe meats; she should know the relative merits of wilted and fresh vegetables, being able to tell when the former can be freshened or when they include too much inevitable waste to be economical.

Wise choice of foods involves possession of other lines of information

and experience which enables the housekeeper to purchase to good advantage. She must realize that out-of-season foods, like strawberries or green peas in January, will be more expensive, and no more nutritious, than the same foods in early summer, while foods which are uncommon at all times, like fresh mushrooms, will be more expensive than cabbage or carrots, which they closely resemble in nutritive value. She may select according to her circumstances, but she should do so "with her eyes open," and not in the belief that the superior virtues belong necessarily to the rare or the unusual. Then, too, she must take into account the quantities which can be handled advantageously in the home. It is the part of wisdom to purchase in quantity those supplies which can be easily stored and kept without deterioration, while such purchase would be decidedly unwise in the case of perishable foods, or if there are no proper storage facilities. She must take into account further the ability of the person who cooks to make acceptable dishes from the foods supplied. If she does not know how to make a palatable pot roast or similar dish from a tough cut of beef and does know how to broil a steak well, there may be some economy in choosing the steak. The suitability, with respect to the needs of the individual family, of the food purchased, is another important consideration. Thus, a good deal of waste comes from the purchase of meats which give too large cuts for the family tastes. For instance, if the chops purchased are so large that the individual portion which would be served (usually one large or two small chops) is larger than the eater's average appetite, part of the meat may be left on the plate and thrown away. The housekeeper, therefore, should take pains to provide materials which can be served in portions to "fit" the family tastes.

The relative amount of time, labor and fuel which is required in preparing foods for the table has a decided influence upon actual as compared with apparent cost. The busy housekeeper who wishes to prepare breakfast quickly may recognize this when she pays a higher price per pound for some ready-to-eat cereal, which at most only requires to be warmed before serving, instead of buying a breakfast cereal costing less per pound but which must be cooked for several hours.

Cookery and other matters pertaining to the preparation of food for the table are particularly important from the standpoint of economy and satisfaction.

The housekeeper needs such knowledge, whether she applies it herself, or whether she directs some one else. If, in addition to the art of

cooking, she understands relative food values and other technical matters pertaining to food and its uses, her task of providing a rational diet will be the easier.

The last factor, namely, the planning of meals, is very important and places a great responsibility upon the housekeeper, since it determines whether or not the diet provides the body with all the materials it requires. It is a problem which is often well solved by the housekeeper on the basis of empirical or other knowledge, but which is almost certain to be wrongly solved if such knowledge is lacking. Certainly, it is one regarding which there is much ignorance and many misconceptions.

A fundamental principle is that the diet, considered for any reasonable length of time, must supply a great variety of chemical substances combined in different ways for the "structural" needs of the body, and also must supply it with energy-yielding substances with which it may perform internal and external work. It seems apparent that a varied diet, reasonably generous in amount, is more likely to meet the body needs than one restricted or unvarying in its make up or scant in quantity. A general variety can be secured in two ways, either by using a considerable number of dissimilar food materials or by using varied methods of cooking with a smaller number of food materials. While both methods have their uses it is well to remember that the first is the one more likely to provide variety from a chemical standpoint.

A consideration of the results of American experiments and other data has led us to conclude that with our ordinary food habits, involving, as they do, the use of a considerable variety of foods in reasonably liberal quantities, one is justified for many purposes in discussing dietetics on the basis of energy only, since a diet which supplies 3000 to 3500 calories of energy per man per day, as ours so very commonly does, almost inevitably supplies the needed protein, ash, and other constituents also. Particularly is this the case when one takes pains to include in the diet a reasonable amount of milk, green vegetables and fruit. If we accept this conclusion as rational, it enables us to go ahead without controversy until the time comes when we have more abundant knowledge of the kinds and quantities of protein we need, of the functions of mineral elements and the best ways to meet our body needs for them, and of the nature of vitamins or other regulatory substances.

In its studies of methods for imparting information through its extension and other activities, the Department of Agriculture has endeavored to classify common foods in a way corresponding to their distinctive

functions in nutrition. The division must be more or less arbitrary, for some foods could go almost equally well in two or more groups. Thus milk, which is a general food, is included with the protein foods because it is a valuable source of this nutrient. Bread is a carbohydrate food, a protein food, and an ash-yielding food, but it is classed a carbohydrate food because its most obvious constituent is starch, and because we use it in the same general way as we do starchy foods like potatoes. The classification as now arranged consists of five groups, and it is the understanding that each of these groups should be represented, if not at every meal, at least once a day, and that if an excessive number of food materials from any one group are used in the course of a day the result is likely to be unsatisfactory from the standpoint of rational dietetics or of taste.

The groups may be described as: (1) Foods high in protein or flesh foods (except the very fattest), milk, cheese, eggs and such meat substitutes as dried beans, peas, and other legumes, and some of the nuts; (2) starchy foods; (3) fat foods; (4) watery fruits and vegetables (excluding dried legumes and fruits which have been dried or combined with much sugar); and (5) sweets.

The grouping is easy to remember and provides a guide for the housekeeper in the selection of food materials for a meal or for a day's ration and also a means of checking up and criticizing the meals which have been served.

Some common foods grouped according to their characteristics
(All five groups should be represented in the diet every day)

GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5
Foods characterized by protein	Foods characterized by starch and similar carbohydrates	Foods characterized by fat	Foods characterized by mineral substances and organic acids	Foods characterized by sugars
Lean meats	Bread	Butter	Spinach	Sirup
Poultry	Crackers	Cream	Peas	Honey
Fish	Macaroni	Lard and other	Lettuce	Jellies
Oysters, etc.	Rice	culinary fats	Potatoes	Dried fruits
Milk	Cereal breakfast	Salt pork	Turnips	Candy
Cheese	foods, meals	Bacon	Apples	
Eggs	and flours	Chocolate	Oranges	
Dried legumes			Berries	
Nuts				
And other protein-rich foods	And other cereal foods	And other fatty foods	And other vegetables and fruits, raw or cooked	And other sweets

The following sets of menus contain none but wholesome and desirable food materials. These food materials, however, have been poorly combined so far as the protein, fat, and carbohydrate which they provide are concerned. The first set is characterized by much protein, the second set by much fat, and the third set by much carbohydrate.

Menus with protein predominating

Breakfast: Cereal cooked in milk, chicken hash with egg, popovers, butter, and milk as a beverage.

Dinner: Dried-bean purée, halibut steak, potatoes scalloped in milk, tomatoes stuffed with chopped beef, bread and butter, and frozen custard with nut cookies.

Lunch or supper: Baked beans, nut bread and butter, old-fashioned rice pudding, and a glass of milk.

The following shows a day's menus (not at all unusual or peculiar) in which fat foods predominate.

Menus with fat predominating

Breakfast: Oatmeal with cream, sausage, and corn bread and butter.

Dinner: Cream of tomato soup, mutton chop with creamed potatoes, greens cooked with bacon or pork, bread, and suet pudding with hard sauce.

Lunch or supper: Creamed salmon, lettuce with oil dressing, tea biscuits and butter, pumpkin pie, and a cup of chocolate.

The following is an example of three meals of combinations common enough but in which carbohydrate (starch and sugar) predominates.

Menus with carbohydrate predominating

Breakfast: An orange followed by corn cakes with maple syrup, and bread or toast and butter.

Dinner: Meat pie and baked potato, green peas, bread and butter, and cottage pudding with chocolate sauce.

Lunch or supper: Rice croquettes with jelly, rye bread and butter, baked apples, and sugar cookies.

In analyzing these one finds that into the first day's menu there went sixteen food materials other than fresh fruits and vegetables, of which nine were from Group 1. Milk entered into or made up ten dishes; eggs, four; nuts, two; and beef, fish, chicken, dried beans, and dried peas, each, one. Into the second day's menu went nineteen food materials other than fresh fruits and vegetables, of which nine were distinctly fatty foods (lard, oil, butter, cream, salt pork, and others), while the meat, fish, and even the cereal chosen were those which contained comparatively high percentages of fat. Into the third day's ration went eleven food materials, of which six were starchy or sugary (rye, wheat, corn, rice, maple syrup, cane sugar).

Thus, by unwise choice one characteristic of the well-chosen diet—a right proportion between protein and fuel—was omitted.

To benefit by well-selected menus, each member of the family should eat all of the kinds of food provided, for, if a person habitually eliminates some particular sort of food as fruits and green vegetables, he has failed to take advantage of the housekeeper's selection, no matter how good it may be. One must, speaking broadly, relish all kinds of food, which is a matter of good habits and good manners as well as of physiological importance.

The housekeeper who will learn the simple classification of foods mentioned above can easily see the relation of the different groups of foods to the character of the meals she provides. She need only go a step further to realize that it is wiser to provide dishes varied in character for a given meal, and also meals varying from those of the same day and varying from day to day. She can do this easily by taking care to see that the different food groups are represented in at least two of the three meals she serves each day. The more extended her information as to market facilities, the wider her knowledge of standards of quality, the wiser her selection of foods, and the greater her skill in preparing and cooking them, the easier it will be for her to plan meals by this or any other method, which will be reasonable, economical and satisfactory, as well as adequate.

THE NEED OF JUVENILE PLACEMENT DEPARTMENTS

The mother of today cannot confine her care and attention to her own children. She must effectively interest herself in the welfare of other children. The need in one direction is well shown by the following statements from the Leaflet of the Women's Municipal League of New York on April 4, 1916.

The state allows children to leave school at 14 to go to work.

In New York State 67,642 children under 16 left school to go to work during the year ending June 30, 1913.

Thousands of these children are stumbling from one blind alley job into another, getting no training, wasting the years when they should be learning a trade.

Not long ago a child of 15 came to one of the state public employment bureaus. She had been drifting around for two months trying to find a job where she could learn something. She had worked in a licorice factory

for three weeks; then she tried winding ribbons for a month. Finding this was leading her nowhere, she tried pasting for a week. Then she heard of the Employment Bureau and came to the superintendent for advice. What could the superintendent tell her? There are not many jobs for young children which give them a chance to learn. At present the superintendent has to depend on hit or miss information that comes her way. She cannot specialize in children's difficulties.

Information about the opportunity for training in jobs for children should be at the disposal of every superintendent who handles the placement of children.

Every day boys and girls of 16, 17, and 18 are coming into the public employment bureaus, after months and years of puttering in blind alley jobs, and asking to be placed as learners in positions offering advancement.

One of the registration cards bears the name of a young worker of 17. For two years she had been working in an establishment where her only job was "putting on tassels." "I don't want to do that any more," she said. "I want to learn something so I can get ahead."

A boy of 18 came into one of the offices. He had been working for three years in one of the metal trades. The metal trades are highly specialized, and in all this time he had been kept on one process. So at 18 he found himself no better off than when he started three years before. There are shops which offer training on more than one machine, so that by 21 this boy could have been a well-equipped workman if he had been started right.

Our young workers are wasting time which they cannot afford to waste. The public employment bureaus are forced to treat this vital problem on the side while finding jobs for adult workers.

It is impossible to get the right kind of information about jobs for children when the time is filled with the demands of older workers.

Placing juveniles is a different problem from placing adults. It is not enough to find a job for a boy. You must find a job that offers training and a chance to get ahead. It is not enough to find a job that offers training. It must be the right kind of training for that particular boy.

If the state of New York allows children to leave school at 14 to go to work, it should make sure that they get into the kind of work that will make them valuable citizens.

Left alone, the child will choose the job which offers the most money, regardless of whether or not it offers a chance to learn. When experience has taught him that this sort of work is getting him nowhere, he is no better off, for he has no survey of the opportunities of industry in his city, and can only feel his way about. This drifting from one footless job to another kills ambition.

So long as the state permits this waste of youth, the problem of adult unemployment will be aggravated.

CLOTHES AND THE BODY

CHARLOTTE GIBBS BAKER

The desire for protection and for decoration if not modesty led savage man to clothe himself. The growth of civilization, with increasing intercourse between men, with the development of industries, the extension of luxury, and finally the rise of fashion, has made the problem more and more complicated. The original idea of protection has often been forgotten and the body has been made to serve as a mere lay figure to display the creations of the costume designer, even being distorted to meet the peculiar fancy of the time.

From time to time in the past, attempts have been made to regulate by law the extravagance and extremes of dress, to emphasize, through dress, class distinctions and even moral status, but no such attempt has been made to protect the health of the individual. In the last half century in this country there have been a number of attempts at dress reform, notably that at the World's Fair in Chicago. These have failed to produce any marked effect, usually because of the extreme nature of the change suggested and the lack of artistic feeling in the designs offered. No doubt these movements have had some influence, but education, beginning with the child and continuing through life, rather than sudden dress reform seems to be the hope of better American dress.

Men, because of the demands of their business, have developed for themselves a costume which changes little and has utility rather than beauty for its commendation. In recent years as women have entered the industries and the professions and have taken up various activities outside the home, there has been a tendency toward a standardization of their dress. It is only quite recently that the subject of clothing has been taken up seriously in the schools.

Notwithstanding the fact that the last twenty years have seen an improvement in many ways, there is still room for betterment of dress. Good walking shoes have been available for some years, but the fashions of the last year have departed far from suitability in this respect. Corsets have been improved and the natural lines of the figure have been more closely conformed to, but lacing has not entirely disappeared. Skirts suitable for walking have too often been accompanied by waists not suitable for street wear. Yet through all the freaks of fashion the

intelligent woman who wishes to dress appropriately for work or street may find styles which permit her to do so.

From an artistic standpoint dress should conform to the general lines of the body, suggesting rather than outlining the more prominent curves. Fashion in its everlasting search for novelty of silhouette often disregards these natural lines, though usually some part of the figure is outlined. Ornament should be used to decorate construction; too often decoration overweighs the construction. As the requirements of modesty are conventional, one should conform to the best convention of the time.

To meet the requirements of hygiene, clothing must regulate the body temperature, must provide for ventilation, for the evaporation of moisture, and must not burden or restrict the body in any way. The design of the clothing, the number of layers, and the quality of the material all have their function in determining the hygienic quality of a costume. Upon the outer garment falls the greater responsibility for the artistic effect, and the modesty of the costume. On the undergarments must fall much of the responsibility for the hygiene of dress. The requisites of the outer garment are much discussed; those of the undergarment are more frequently neglected.

Each of the fibers used for clothing has characteristics which affect its suitability for use next the skin. Wool and silk are poor conductors of heat. Because of the nature of the fiber when woven, wool holds much air in the meshes of the fabric, thus adding warmth to the garment. Although silk may be woven to hold air, it is not ordinarily so woven. Wool does not wash easily, and with continual washing shrinks and becomes hard, thus closing up the air spaces and preventing the access of the air to the skin. Wool is often irritating to the skin, and in overheated buildings, trains, and cars, is too warm for many people in active life. Silk is much pleasanter in feel than wool, and does not shrink. Although both silk and wool absorb water readily without seeming wet because the water is taken into the fiber, yet the nature of the fabrics as a rule prevents their taking up any large amount without becoming very wet.

Cotton and linen are cool fabrics because they conduct heat away from the body. When woven in the plain weave the fabrics hold little air. Neither of these materials has the quality of absorbing moisture into the fiber to such an extent as wool or silk, therefore when they absorb water they feel wet. Linen, particularly, becomes clammy and uncomfortable. The great advantage of these materials for garments

next the skin is the ease with which they may be washed and the fact that they may be boiled.

The structure of a fabric affects materially the suitability for undergarments. Knit fabrics have more meshes than woven ones and thus allow the passage of air to ventilate the skin. There is always air in the meshes, making them partial non-conductors of heat and thus adding to the warmth of the garment. The meshes also absorb moisture and hold it until it has a chance to evaporate. The efficiency of cotton, linen and silk is thus greatly increased by being knit rather than woven; with wool the advantage is not as marked since the woven material has many air spaces.

A mixture of wool and cotton combine the advantages of both. It does not irritate as does all wool, is not so warm, washes better, and, it may be added, is not so expensive as all wool. Wool and silk is a very pleasant combination but the cost is greater. Linen in the mesh weave is particularly desirable for hot weather, as it feels cool and does not become clammy.

Several layers of light weight clothing hold air between them and are warmer than a single layer of heavier material. When the warm layer of air next the body is changed heat is taken away from the body; therefore the clothing must prevent too rapid passage of air. On the other hand a garment impervious to air, worn either outside or as underclothing soon becomes uncomfortable unless it is loose enough to allow air to pass under it. Rubber coats and boots are exceedingly uncomfortable on a warm day, and even leather shoes are far from ideal in this respect.

The amount and character of the clothing worn must be determined by the individual, and will be influenced by many factors. Extreme youth and old age require more clothing than active middle life. The individual in poor health must be more protected than the well. Those living and working in heated buildings must dress accordingly, adding the necessary clothing for protection when going out. The calendar was formerly considered an unfailing informant as to the time to put on and take off the woollens, but fortunately for most of us it has lost its prestige.

Heat is produced by the body, and if this heat is unnecessarily wasted unnecessary strain is put on the body, making one more susceptible to illness. On the other hand too much clothing makes one sensitive to exposure to cold. Low shoes and thin stockings are not suitable

for zero weather, but a neck swathed in furs on a moderate day is little better. No definite rules may be laid down, but well informed common sense must be the guide.

Freshness of outer garments is desirable for aesthetic effect; cleanliness of undergarments is imperative for hygienic reasons. As the skin can not perform its functions with clogged pores, so the clothing next the skin can not perform its functions with clogged meshes.

A physician of forty years ago tells of a woman who came to her office shivering with cold under seven petticoats. "Poor thing," the physician comments, "of course she could not keep warm, her body was so burdened carrying all those clothes it had no energy left to keep her warm." The modern union suit, with its even covering over all the body is a great improvement over two piece garments adding extra layers about the overlaid waist. Tights or knickerbockers give much better protection than petticoats. The one piece dress distributes the weight and does not overburden the waist or hips. The corset is still not ideal, but is much better now than in times past.

When all women understand all the discomforts caused by bad shoes, and the joy of comfort in walking, perhaps the day will come when fashion can not lead us so far astray in this respect. Our ideas of beauty in footwear sorely need readjustment. We have discovered the beauty of the natural figure, perhaps we shall discover that of the perfect foot. The shoe manufacturer has an opportunity for profitable missionary work.

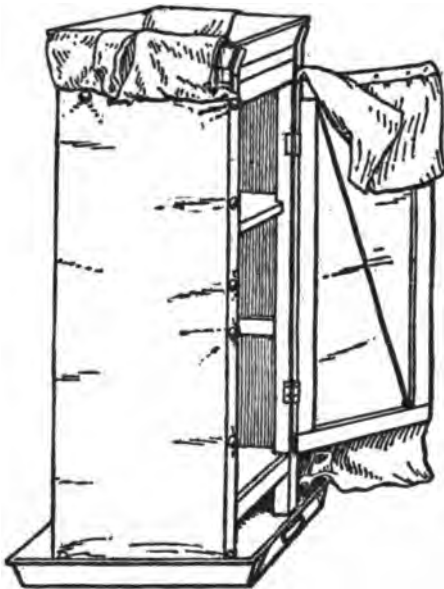
The day may come when perfect body freedom and natural grace will be more admired than false silhouettes, when beautiful fabrics will be made into suitable clothing expected to last for a time, and women will spend some of the time now wasted in endless shopping in developing and keeping their bodies in perfect condition.

AN ICELESS REFRIGERATOR

A very satisfactory device which may be made at home for use in hot weather is the refrigerator that depends for its coolness upon the evaporation of water from the covering of cloth that by means of wicks is kept moist from a pan of water resting on the top.

On a dry hot day a temperature of 50°F. may be obtained in this box, that may be made in the following way as described by the Department of Agriculture:

Make a screened case 3½ feet high with the other dimensions 12 by 15 inches. Use a solid top and place on this a shallow water pan 12 inches square, or fit the pan closely into the opening of the top frame and support it by 1-inch cleats fastened to the inside of the frame. Place two movable shelves in the frame, 12 to 15 inches apart. If the



Iceless Refrigerator

refrigerator is to be used indoors have the whole thing standing in a large pan to catch any drip. The pans and case may be painted white, allowed to dry, and then enameled. A covering of white canton flannel extending to the lower edge should be made to fit the frame. Have the smooth side out and button the covering on the frame with buggy or automobile curtain hooks and eyes, arranged so that the door may be opened without unfastening these hooks. This can be done easily by putting one row of hooks on the edge of the door near the latch and the other just opposite the opening with the hem on each side extended far

enough to cover the crack at the edge of the door to keep out the warm, outside air and retain the cooled air. This dress or covering must be hooked around the top edge also. Two double strips one-half the width of each side should be sewed on the top of each side and allowed to extend over about 2½ or 3 inches in the pan of water. Place the refrigerator in a shady place where air will circulate around it freely. If buttons and buttonholes are used on the canton flannel instead of buggy hooks, the cost should not exceed 85 cents.

EDITORIAL

The Annual Meeting. All those who were fortunate enough to attend the meeting of the American Home Economics Association at Ithaca three years ago, or who have experienced the gracious hospitality of Cornell at the Graduate School of Home Economics, or at other times, must gladly have welcomed the announcement made in the April BULLETIN of the Association that the annual meeting is again to be held there with Miss Van Rensselaer, the President of the Association, and Miss Rose, joint-Head of the Home Economics Department, as hostesses.

To others may we say that the charm of the region, the campus unrivaled for natural beauty, the opportunity for delightful excursions, should prove an additional inducement to attend even though the chief attraction be the opportunity to become acquainted with the workings of one of the most successful departments of Home Economics, to avail one's self of the resources offered by Cornell University, and to gain the inspiration that comes from meeting one's fellow workers.

Since the meeting is to be held from June 28 to July 3, it will be possible to go directly from Ithaca to the convention of the N. E. A. in New York City, July 1-8.

A Personal Opinion. The editor of this JOURNAL believes that the ideal method is to remove from the home every possible bit of work that may be done outside it, though she realizes that at present this is not practical for a large part of the population and that for some it may not now be even desirable.

She believes that one purpose of the American Home Economics Association should be the working out of plans by which more of the household processes may be carried on in a community way. The coöperative laundry at Chatfield, Minnesota, offers a good example of this kind of work. She believes that raising the standard of bakeries and manufacturing plants both in regard to sanitation and to quality of food products is even more valuable work than instructing housekeepers how to prepare their own products.

She was consequently somewhat disturbed to find a whole column in one of our city newspapers devoted to a quotation from the students' work on the "comparative cost of homemade and commercially prepared foods" that was published in the March JOURNAL, with a definite conclusion in favor of the home prepared foods, though the contribution was guarded by the statement that "the data given and the conclusions drawn in this partial report are valuable largely because of the suggestions which they offer for more thorough tests along the same lines." We need much more experimental work and more consideration of the various economic factors involved before we are ready to draw conclusions. Because we need these experiments the JOURNAL has welcomed and published contributions on this subject and will continue to do so in order that we may have a basis for judgment. Later we shall call attention to some of the difficulties involved in formulating conclusions and to the fallacies inherent in some of the articles.

Standardized Dress. Many of us can recall numerous efforts more or less sporadic toward the reform of women's dress. These have usually been based on the principles of greater freedom of movement and the requirements of hygiene. Some of the dresses proposed have of necessity been doomed to failure because of the complete neglect of the elements of beauty; while others have been fashioned with due regard to line and proportion as well as to comfort. Today attempts to standardize dress emphasize additional reasons that have not been so often urged: the economic waste involved in the various forms of competition in dress, in the frequent change of style, and in over-emphasis upon adornment; and the economic hardships enforced upon the worker through the extremely seasonal character of the women's garment-making industry, the low wages, and the bad sanitary conditions, due partly to risks that the manufacturer is forced to assume.

Perhaps these social reasons may be more effective in bringing about reform than has been the personal appeal. Certainly there is a growing feeling that in some way the more evident evils at least should be corrected. The Home Economics Department of the General Federation of Woman's Clubs in an article entitled "Clothes and the Woman" in the January number of the *Federation Monthly* suggests that there be put upon the market six or eight different standard styles of street suits from which each may select the kind best adapted to her special needs. Having purchased this becoming suit of good material one should be able to wear it until it is worn out, instead of discarding it within a year or less because it has gone out of fashion. This plan deals

with street clothes only. It seems sensible and should receive careful consideration.

Another solution is proposed by Miss Ronzone of the Home Economics Department of the University of Missouri. Making her appeal largely to the social responsibility of women, she suggests the adoption for all costumes of one design, modified slightly to suit individual types. She has devised such a dress that is adapted to different materials and that has proved satisfactory with many who have tried it. Whether one style of dress for all women and all occasions is practicable or desirable may seem a question with many, but it should not be answered without serious consideration of Miss Ronzone's work and her contribution to the dress problem.

COMMENT AND DISCUSSION

In looking over the article "The College Girl's Wardrobe," appearing in the April, 1916, issue of the JOURNAL, three things occur to me as requiring careful consideration by anyone using such a budget as a basis of expenditure.

The first of these is the entire absence of any allowance for the upkeep of the wardrobe. It is surely proper to charge up to one's clothing account the necessary expense of keeping the wardrobe in wearing condition. For instance, the cost of repairs is an appreciable item in the matter of shoes. On averaging personal accounts kept for several years, I find that the cost of repairs on shoes of good material is approximately 30 per cent of the original cost. That is, a pair costing \$6 will, before they are ready for the discard, need repairs averaging about \$1.80; and the cheaper the shoes, the relatively greater the price of repairs.

In figuring upon the cost of dresses made at home, it seems to me that too little has been allowed for the necessary findings. As a rule (referring again to an average of several years' accounts), the extras, such as thread, pattern, bindings, buttons, and simple trimmings, are about 12 per cent of the price of material for winter (woolen) dresses and from 20 to 25 per cent of the cost of cotton materials. These estimates are based on clothes of about the same quality as that indicated in the college girl's wardrobe.

Another thing which should be considered in a wardrobe budget is the proportion to be spent for the different articles. While I am not

familiar with prices in the West, it occurs to me that a coat costing \$30—or one costing \$18—is somewhat out of proportion to undervests at 8½ cents apiece or stockings at 12½ cents a pair. Would not a better level of expenditure be represented by a coat costing \$25—or \$15—putting the money thus saved into underwear and hosiery of better quality?

A college girl gives her clothes fairly hard wear, so it behooves her to consider with care the expense of repairs; and she should certainly avoid being a “whited sepulcher” of shoddiness in underclothing.

ESTHER SWARTZ.

THE SMITH-HUGHES BILL

This note, in answer to some of the objections to the Smith-Hughes Bill as it stands, should be read as a supplement to Miss Kinne's article, in the April number of the JOURNAL, on Terminology and the Smith-Hughes Bill.—THE EDITOR.

The friends of the Smith-Hughes bill feel that it is best to pass it with as few amendments as possible. The pressure of business in both the Senate and the House makes its passage somewhat doubtful, and it seems probable that if it does not go through at this session of Congress the work will need to be done over again from the very beginning.

It seems to be the general opinion of those who have studied the matter, that an amendment is desirable in regard to the Commission that would put the bill into operation.

It is the opinion of a number of teachers of Home Economics that the bill should be amended in regard to its Home Economics provisions. An amendment has already been proposed including a clause authorizing the federal government to provide money for training teachers of general Home Economics. Such an extension of federal control over state affairs would arouse much discussion in both the Senate and the House. The bill would seem to be wisely framed to avoid such a contingency. The original commission felt that most states have excellent provision for the training of teachers for the general phases of household economics or household arts.

Many experts in the field of education and many Home Economics teachers approve this bill as it stands. It would seem probable that the training of expert teachers for the more technical phases of the household arts would act as an impetus to the general teaching of the subject, and as a spur to the general teacher. Surely, Home Economics has so established itself that it need not fear the development of a new phase in its own field.

HELEN KINNE,
*Chairman of Legislative Committee
American Home Economics Association.*

THE QUESTION BOX

Conducted by a committee of the Science Section of the American Home Economics Association. Chairman, Prof. Amy Louise Daniels, University of Wisconsin, Madison, Wis. Questions may be sent directly to Miss Daniels.

Question: The following statements from *American Cookery* (March, 1916) do not accord with what I have been teaching. Will you state your opinion?

Oatmeal should never be cooked until it is mushy. Steel-cut oats are good for the reason that they do not form a sticky paste; they should be cooked no more than six minutes. Stir the oatmeal into boiling water and let it cook until it thickens, then set it aside to simmer for five or six minutes and you will have a most perfectly prepared breakfast cereal.

When oatmeal is so thoroughly cooked that it becomes a mush it will roll up into little balls in the colon, and produce one of the worst forms of constipation. For many years, some of the best specialists have forbidden oatmeal because of this fact.

No breakfast cereal should be cooked over eight minutes, because it is important to carry some raw starch into the lower part of the intestine, and this is done when cereals are not thoroughly cooked.

Raw food faddists have made some remarkable cures. A number of people have been practically snatched from the edge of the grave by living on a raw diet instead of the one they had previously followed.

However, there is a happy medium—it is not necessary to live on raw oatmeal and raw potatoes in order to get starch uncooked. The six-minute cooking rule gives a palatable, hygienic form of oatmeal and other cereals,

Answer: The clipping certainly states some surprising facts, if one may call them such. Starch which is uncooked, or from which that something which surrounds the starch grain has not been removed either partly or wholly, cannot be digested, that is, by the enzymes of the alimentary tract of man. The bacteria, however, may act upon it in the lower bowel causing much discomfort and more or less digestive disturbance (Reichert, E. T.: *The Differentiation and Specificity of Starches in Relation to Genera, Species, etc.*, Part II, 160, 1913, p. 80). In the raw steel-cut oats there are many starch grains that are uninjured; unless the temperature is sufficiently high, and the high temperature is sustained sufficiently long to destroy the continuity of the coating of the starch grains, these cannot be digested. Furthermore, unless the cereal is cooked so that the cells of which it is made up can be separated by the various chewing and digestive processes much of the food value will

be lost, for a considerable portion of the food materials will be undigested and therefore unabsorbed. Eight minutes is not sufficiently long for cooking those cereals which are not previously cooked, or very finely divided. (U. S. Department of Agriculture, Office of Experiment Station Bulletin No. 202; The Digestibility of Starch of Different Sorts as affected by Cooking, Edna D. Day.)

Question: How can the teacher make the housekeeping part of a cooking lesson interesting to girls fourteen years old who have had cooking lessons for four or five years?

Answer: Why spend so much time on cookery when there are so many other important phases to be considered? If it must be cookery, why not consider cookery from the standpoint of food values, marketing, amount that should be spent for food, planning, preparation, and serving of meals? One might introduce much house cleaning to get the house ready for a party if one wished to follow the old fashion. However, if it were my class, I would change the course and have the food work incidental in a course which dealt with the house and its structure, including heating, lighting, and cleaning. Quite young children can be interested in these subjects if they are rightly presented.

A Correction. Miss Daniels sends the following correction. We regret the error that arose from the misreading of her manuscript.—
THE EDITOR.

In the question column of the May Journal, under the question "Why do breakfast foods disagree with some children?" the following statement is made on page 249: "By longer cooking the starch is not only more thoroughly cooked, but the *starch cells* of the cereal are more easily separated or broken apart when it is chewed." It should read: "By longer cooking the starch is not only more thoroughly cooked, but the *cells of the cereal* are more easily separated or broken apart when it is chewed." This is perhaps a minor point, but starch cells do not exist, and furthermore, the object in cooking the cereal a long time is in part to separate the cells of the grain as above stated.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Good Taste in Home Furnishing. By MAUD ANN SELL AND HENRY BLACKMAN SELL. New York: John Lane Company, 1915, pp. 140. \$1.25. By mail of the Journal, \$1.33.

A valuable addition to the list of books helpful to the average person who desires a home of good taste but who has not the knowledge of those principles which are the foundation of such a home.

The importance of balance and harmony is discussed in a remarkably clear way and illustrated with attractive little black and white drawings. The value of having only necessary furniture and the fitness to purpose of that furniture as well as its harmony with the structural lines of the room is well emphasized. A very definite basis for color schemes is also presented, as well as helpful suggestions concerning draperies from the viewpoint of design, arrangements and appropriateness of material. There is also an excellent chapter on the best way of lighting rooms for definite purposes.

Inside the House of Good Taste. By RICHARDSON WRIGHT. New York: McBride, Nast and Company, 1915, pp. 155. \$1.50. By mail of the Journal, \$1.64.

The title fits extremely well the book edited by Richardson Wright, editor of *House and Garden*. It is a book of many photographs which give us glimpses into the homes of people of good taste. These show, better than words can do, the essentials which make rooms livable, also that quality, personality, which converts houses into homes. Each photograph is accompanied with a few words of criticism, calling attention to the especially good features of the room and suggesting, when possible, improvements.

A chapter is devoted to each of the principal rooms of the house, the arrangement of the furniture for comfort and convenience, and its harmony in style and fitness to purpose.

A Guide to Laundry Work: a Manual for Home and School. By MARY D. CHAMBERS. Boston: The Boston Cooking School Magazine Co., 1915, pp. 104. \$0.75. By mail of the Journal, \$0.80.

As a basic text-book for teachers and students in Laundering, the *Guide to Laundry Work* will be found very helpful. This book will appeal also to the scientific housewife of today, as it states the most essential knowledge and fine art of laundering in a concise and clear manner with the fundamental chemistry in a form easily grasped.

The arrangement of the matter of the text proceeds in logical order from the first chapter, which deals with processes involved in cleansing and removing stains, to the last chapter which gives a detailed description and cost of appliances used in washing, drying and pressing.

Prominent among the distinguishing features of the book are:

- (1) Time standards for ironing; to do the best work with the least effort and time is always the problem.

- (2) The page devoted to the subject of setting colors before washing colored materials or restoration after washing.

- (3) The experiments on water, the making of soap, the testing for adulterations and defects of soap and soap powders.

The well organized index and plain clear cut illustrations render this manual very usable as a reference book and text-book.

Changes in the Food Supply and their Relation to Nutrition. L. B. MENDEL, New Haven, Conn.: Yale University Press, 1916, pp. 61. Price \$0.50.

In this lecture, delivered before the Second Pan-American Scientific Congress at Washington, D. C., in January, 1916, the author takes up a number of factors which influence the supply of food energy and its availability where needed. Reference is made to the forecast by Sir William Crookes, in 1898, that the world's wheat supply would fail to meet the demand within 30 years and the author cites a number of factors which make such speculations futile, among them being increased acreage, improved agriculture, and progress in nutrition and food chemistry. The various methods of food preservation, such as cold storage, desiccation, and food conservation, like the better utilization of by-products and new foods, are discussed at length with reference to their effect on food supply. In considering the importance of transportation in this connection it is stated that "the development of commerce among nations having adequate means of communication has rendered the distribution of food materials easy and developed a sense of security (under normal conditions) against failure of food supplies. The growing organization of transportation facilities has encouraged the introduction of dietary changes never thought possible or even contemplated a few generations ago."

The author points out that, while the dietary habits of a community or nation may appear as fairly fixed from generation to generation, changes in eating habits are quite common, and gives as examples the increasing use of fresh fruits, sugar, edible fats, green vegetables, etc.

Attention is called to the contributions of physiology and food chemistry to the problems of food supply, especially the knowledge of the importance of the so-called "accessory diet factors" or "vitamins" and the amino acid content of the proteins. Speaking of the importance of improvement of household science in a better understand-

ing of the principles of human nutrition, the author says, "herein lies the significance of the notable 'home economics movement' of the present time. Nutrition and its relation to the food supply is in no small measure a problem of the home. Just as the lessons of modern science are permeating the practice of up-to-date agriculture, so they ought to influence and modify the performance of the household" The numerous footnote references throughout the volume add to its usefulness.

Schools of To-morrow. By JOHN DEWEY and EVELYN DEWEY. New York: E. P. Dutton and Company, 1915, pp. 316. \$1.50. By mail of the Journal, \$1.61.

Those who have read over and over again Dr. John Dewey's *School and Society* and whose educational ideals have been molded to a great extent by that book, have welcomed this new work, written in collaboration with his daughter, that shows some ways in which the ideals of the former book have been worked out concretely in more and more schools. The schools used for illustration are selected from various parts of the country and include that of Mrs. Johnson of Fair Hope, Ala., the University School, Columbia, Mo., The Francis W. Parker School, and some of the public schools of Chicago; one of the Indianapolis public schools, and the well known Gary schools. The parent who wishes to gain an understanding of the aim and purpose of the most modern type of education and an idea of what the school may become, will find this book most illuminating. Every teacher should read it not only for the information gained, but for the inspiration it will bring.

The teacher of Home Economics will be especially interested in Chapters VII to X, dealing with the relation of the school to the community; the school as a social settlement; industry and education; democracy and education. The description of the work for girls and boys in Indianapolis in one of the poorest districts of the city, with the account of the influence that this school

gained on the home and the community, marks an achievement that cannot fail to point the way to much greater opportunities for the Home Economics teacher than have yet been realized. Education through industry is illustrated by the familiar work at Gary, by some of the Chicago public school work, and that of Cincinnati. In connection with the latter it is suggested that factories and stores will not be the only community institutions that will furnish laboratories for the school children of the city. The city college, with its plan of giving the home economics pupils practice in connection with the city hospital, and the engineering and architecture students work in the machine shops and draft rooms of the

city, is pointing the way toward the further development of such coöperation.

One cannot close a review of this book without speaking of the great emphasis that it places upon the relation of education to democracy.

"The conventional type of education which trains children to docility and obedience, to the careful performance of imposed tasks because they are imposed, regardless of where they lead, is suited to an autocratic society. . . . Children in school must be allowed freedom so that they will know what its use means when they become the controlling body, and they must be allowed to develop active qualities of initiative, independence, and resourcefulness, before the abuses and failures of democracy will disappear."

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- The House on Henry Street.* By Lillian D. Wald. New York: Henry Holt & Co., 1915, pp. 317. \$2.00.
- How to Live. Rules for Healthful Living Based on Modern Science.* By Irving Fisher & Eugene Lyman Fisk. New York: Funk & Wagnalls Co., ed. 3, 1915, pp. 345. \$1.00.
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Maple Sugar: A Unique American Dainty. E. G. Chapin, *Home Progress*, 5 (1916), no. 7, pp. 307-310.

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Soup Kitchens. M. Rubner, *Hyg. Rundschau*, 25 (1915), no. 9, pp. 309-315; abs. in *Expt. Sta. Rec.*, 33 (1915), no. 5, p. 462. The nutritive and energy values of some dietaries commonly furnished poor people at small cost are discussed.

A Penny Lunch. Sarah W. Maury and Lena L. Tachau, *Louisville*: 1915, pp. 64, pls. 2.

Spending the Noon Quarter. J. B. Harrington, *Forecast*, 11 (1916), no. 3, pp. 194-199, fig. 1. Suggestions are given as to how the money spent for lunches may be best invested.

NEWS FROM THE FIELD

The Meeting at Urbana. A goodly number of Home Economics people gathered at the University of Illinois April 18 to 20 to attend the meeting of the American Chemical Society that for the first time offered a definite Home Economics program for part of its biological section meeting.

Papers were presented by Dr. Ruth Wheeler on A Study of Carbohydrates as Milk Modifiers and Dr. Louise Stanley on The Occurrence of Creatin in the Urine of Children. Dr. Emily C. Seaman of Teachers College gave a Report of a Survey of the Food Conditions at Sing Sing Prison and read a paper on The Relation of Biological Chemistry to Problems of the Community. Mr. Edwin Lefevre presented a Bacteriological Study of Hamburger Steak. Mr. H. L. Lang with others gave a paper on Cleaning Silver by Contact with Aluminum in Alkaline Solution, and Iron Rust and Its Removal. Miss Elizabeth W. Miller read a paper on Solution of Antimony from Some Enameled Cooking Utensils. Professor Bancroft of Cornell University gave an informal discussion of Washing and Cleaning, Whipped Cream, and Mayonnaise.

Besides the meetings there was a delightful luncheon on Wednesday noon at the Champaign County Country Club, given by the ladies of Urbana, a reception at the Woman's Building, a luncheon given to the Home Economics visitors by the Household Department of the University, and a subscription dinner at the Masonic Temple.



Conference of Home Economics Extension Workers. The leaders in Home Economics Extension Work in the Middle West met in Chicago at the Sherman Hotel, April 11 and 12, for conference. The meeting was called to order by C. B. Smith, chief of the

Office of Extension Work, North and West, States Relations Service, U. S. Dept. of Agr., who presented Miss Florence Ward, the new executive in the Office of Extension Work, North and West. Miss Ward presided at the various sessions. The states represented were: Illinois, Indiana, Iowa, Michigan, Missouri, Ohio, Wisconsin, and Pennsylvania. The extension work carried on in each of these states was reported in detail in most cases by the head of the Home Economics Department and the state leaders in Home Economics Extension.

In the majority of the states the work in movable schools is especially well developed and this is supplemented by club work of various types.

Considerable interest was manifested in the possibilities of women county agents and two out of the three working in the Middle Western States were presented: Miss Benefiel, from Kankakee County, Illinois, and Miss Pettit from Erie County, New York.

Exhibits of working equipment from the different states were shown and explained on Tuesday evening.

Wednesday afternoon, the work carried on by the Home Economics Division of the States Relations Service was discussed by Dr. Langworthy, Miss Hunt and Miss Bailey. Miss Ward told of the extension work in the South and Dr. True explained the development and limitations of the extension work as carried on under the Smith-Lever Act. The meeting closed with the brief reports of committees appointed to summarize the discussions of work of the states represented.



New England Extension Workers. The third annual meeting of the Home Economics Section of the New England Extension Workers was held in Boston, March 2 and

3 with Miss Laura Comstock of the Massachusetts Agricultural College as chairman. An extension worker from each of the New England states was present and gave a five-minute report of the work in her state. Miss Minnie Price, the lately appointed woman worker of Hampden County, Massachusetts, told of her experience during the past year.

Mrs. Julian Dimock of Vermont and Miss Maud Hayes of Connecticut spoke of the value of standards in the judging of products.

Better school children, with the idea of giving attention to the noon lunch, was the topic by Miss Sayles.

Miss Florence Ward, Dr. True and Professor Clinton from Washington were present at one meeting.

The following score cards were agreed upon to be tested out by the different members to see whether they were workable ones or not.

Bread: Proper size of loaf, 9 x 3½ x 3½
External appearance

	Per Cent
Color }	15
Size }	
Shape }	
Crust	
Depth }	10
Texture }	
Crumb	
Color.....	5
Grain.....	10
Lightness.....	5
Moisture.....	5
Thoroughness of baking.....	10
Flavor.....	35
	100

Canned fruits

Jar	
Shape, size, label.....	5
Neatness.....	5
Fruit	
Arrangement.....	5
Shape.....	5
Color.....	5
Texture.....	10
Flavor.....	30
	55

Juice	Per Cent
Clearness.....	5
Consistency and flavor.....	15
Proportion of fruit to juice.....	15
	100

Canned vegetables

Jar	
Size, shape and label.....	5
Neatness.....	5
Vegetables	
Arrangement.....	5
Shape.....	5
Color.....	5
Texture.....	25
Flavor.....	35
Fullness of pack.....	15
	100



The Maryland Home Demonstration Conference was held at the Maryland Agriculture College, College Park, May 22-27 with Miss Katharine A. Pritchett, presiding. The United States Department of Agriculture was represented by Dr. Knapp, Mr. O. B. Martin, Miss Creswell, Miss Powell, Dr. M. N. Straughn, Mr. Harold S. Lang, and Mr. J. M. Kingborne. The speakers from the college were President Patterson, Mr. T. B. Symons, Mr. Alford, Mr. Shaw, Mr. Brigham, and Mr. Stanton.

The Home Demonstration work in Maryland including Girls' Club work, movable schools in Home Economics, and single lectures and demonstrations, have been carried on this year by the state agent, Miss Katharine A. Pritchett assisted by Miss Florence J. Hunt and Miss Kathleen Calkins and nine county agents.

At the conference lectures and demonstrations were given on poultry husbandry, gardening, canning, jelly making, butter and cheese making, bread, and labor saving devices. Miss Helen Comstock, agent of Kent County, prepared a balanced meal using food produced and canned by the Girls' Clubs. Miss Virginia Moore, state agent of Tennessee spoke of the organization and development of work in Tennessee.

New York Y. W. C. A. Cafeteria. Many who are planning to attend the meeting of the N. E. A. in New York will be glad to know of a cafeteria laterly opened by the Y. W. C. A. at 29-33 W. 36th Street.

The Association conducted at their headquarters at the San Francisco Exposition a cafeteria with a seating capacity of 500. This was open for continuous service between 11 o'clock in the morning and 8 o'clock in the evening, and for many weeks the attendance ran over 4000 daily, while on one occasion it served 6119 people. There was also a less formal luncheon service at the club house on the amusement zone.

The new venture in New York City is undertaken as a demonstration of what a successful cafeteria on a large scale can be, especially when it has connected with it features that business and suburban visitors and shoppers appreciate and almost require. The Association hopes by this means to show local Associations the various possibilities, and also plans, in connection with the summer theoretical course, to make use of this opportunity to give women who have good technical training and some Association experience a knowledge of how to do things on a larger scale than they have been accustomed to handle.

This is "A good place to meet your friends, rest, or change your dress for the evening. These conveniences are for your use."



A School Cafeteria. The effective way in which one woman may bring about changed conditions in school lunches is illustrated by the work of Mrs. Caroline Kemper Buckley, in Shreveport, Louisiana. She realized the necessities of a cafeteria in the school and studied up the subject, coached two doctors to speak in regard to the need, and persuaded the school board to start the plan.

The first attempt failed because the board paid no attention to the carefully prepared data and took as a manager an inexperienced woman. The board then turned it over to the women who equipped

two big rooms in a basement, making it white and orderly, with flowers on all the tables nearly every day, so that no single objection has come to the position of the lunch room.

For the opening days provender was begged. There was so much interest that men came with heavy loads of food. One man carried fifty pounds of hot meat a whole mile. With this beginning the cafeteria could hardly fail to be a success.

The lunch room covers the needs of two schools on one campus. Since the beginning portions have been enlarged, dainties have been added, and now twenty-five five cent tickets are sold for a dollar. Organizations in town frequently send three or five dollars for tickets that may be used at the discretion of the teacher when needed, so that there may be provision for every child.



The School of Domestic Arts and Science in Chicago has for the last year occupied the entire fifth floor of the Tower Building, Madison Street and Michigan Avenue, with an admirable equipment for the uses of the school.

The work of the school is divided into two general divisions, that for the homemaker and vocational work. In the homemaker's department the women, both in regular classes and through lectures, are studying the management of the home. The vocational department maintains the luncheon room, and girls who are admitted to regular training are paid a wage for what they do. The sewing department plans a similar type of work for another year.

Four lectures are offered each week, one of them free, with an average attendance of about fifty. These reach the practical homemaker who has no time for class work. A homemaker's round table for informal discussion of the problems of the home has been established this year, meeting twice a month, open to the members of the school. The bulletin of the school has been enlarged and made of interest to women in the home.

During the year announcement has been made by Mrs. Potter Palmer of the selection of this school as beneficiary of the fund left from the Woman's Department of the World's Fair. This was not a government fund, but was derived from sales in the Woman's Building, and was placed in Mrs. Palmer's hands with full discretion as to its disposal for the benefit of women. The fund amounts now to \$100,000. The principal will be turned over to the Trustees of the School of Domestic Arts and Science as a permanent trust, the income to be administered by the Board of Managers of the School of Domestic Arts and Science. Announcement will be made as soon as possible as to the first use to which this income will be put.

A Successful Practice House. The practice house at Stout Institute, Menomonie, Wis., is of the type that includes residence in the house, not merely making use of the rooms for the teaching of furnishing or for the serving of meals. The cottage used for this work is a thirteen-room house and is occupied by the girls in groups of nine, for a period of two weeks, four or five girls entering each Saturday night. The work is divided into five departments, each presided over by a manager, the meals, daily care of the house and entertaining, laundry, special cleaning, and special baking. The work is so well organized that each girl is able to perform her duties while still carrying on the regular work of the school. The cottage is owned by the school, and weekly expenses are met by the board paid by the girls. All accounts are kept by the girls. The value of economy is learned through the careful management and preparation of meals; organization is gained through the necessity of planning and doing many duties; and the value of time through the realization of the necessity of doing work thoroughly and quickly.

Chicago Normal College Summer School. For the first time since the days of

Colonel Parker the Summer School is open to teachers outside the city of Chicago. The household arts program includes a course in dietetics with laboratory work in the preparation of food, chemistry of food, and beginning and advanced sewing. Miss Jenny H. Snow, Head of the Department will be in charge of the work. The dates are June 26 to July 28.

Ohio State University reports a variety of work in Home Economics extension. The work is directed by the head of the Home Economics Department and the force includes an assistant supervisor and nine instructors. There are two types of movable schools carried on, the first for village and farm women, of which there were forty-eight in 1915-1916, the second in connection with county normal schools. As a result of the week's work in one normal school, with the subsequent assistance of the university department, a self-supporting lunch room has been established and work in sewing and foods has been introduced into the high school, which is in consolidation with the normal school.

A plan is also in operation for teaching Home Economics in the rural schools in connection with the school lunch. This helps to overcome the three main difficulties usually found in the way of introducing definite educational work in Home Economics into the rural schools. Lack of special training on the part of the teacher, lack of time in an already overcrowded program, and lack of space and equipment have often been prohibitive for such work. These are overcome to a great extent by instruction in the preparation of the necessary noon lunch. Each printed lesson-help for teachers contains a list of necessary equipment, an order list of supplies, directions for the preparation of the food, questions to be answered in notebooks and suggestions for work to be done at home.

Homemaking Clubs for girls are being organized for the purpose of interesting them in activities of the home and community, and stimulating helpful social life. Printed cir-

culars give instruction and definite plans for the work to be done.

The walls of the new Home Economics building at Ohio State University are rapidly going up. The building, which is to be ready for occupancy by September 1, 1916, is a three-story fire-proof brick structure, costing approximately \$150,000.

Space is provided for research, and institutional laboratory—Home Economics extension work and an experimental flat as well as the ordinary laboratories, class rooms, and offices.

The building is heated from a central plant, and the ventilation system includes air-washers and humidifiers. A vacuum cleaning plant is to be installed also.

The plans for the building will be given later.

Brief Notes. The twentieth annual conference of the National Congress of Mothers and Parent-Teachers Associations was held from April 4-9 in Nashville, Tennessee. The next meeting will be an international one, and will be held in Washington, D C., in April, 1917.

The Women's Municipal League of New York City, Mrs. Henry A. Stimson, President, is publishing weekly a series of leaflets on Women and the City's Work. The leaflets deal with school conditions, legislative bills, surveys of the districts of the city, achievements of the city administration, community service other than school work undertaken by women, the Gary plan, and other topics of immediate and vital interest. The effective way of stating conditions is illustrated by the graphic presentation comparing opportunities of the child in Yorkville schools and in Gary schools, and in a quotation from one of the leaflets given in another part of this JOURNAL. The price of the leaflets is twenty-five cents a year. It would be well worth while for every mother and teacher to subscribe for them.

The Women's Municipal League of Boston issues monthly bulletins from December to May, giving in another form as inter-

esting an account of their activities as those of the New York Association. The bulletin for January, 1916 is issued by the department of Food Sanitation and Distribution, and includes the inspection score card of the Board of Health; a photograph of the clean food shop in the League's traveling exhibit; the report of the Candy Committee that has been undertaking an investigation of soda fountain conditions and advocating the adoption of paper cups; some effective methods of getting rid of rats, with copies of posters; and an account of open-air markets in Newton Center and in New York City.

Institution Economics Section. The meeting of the Institution Section of the American Home Economics Association, ordinarily held at Lake Placid, will meet this year at Cornell University, Ithaca, New York. Wednesday, June 28, has been set for the meetings of the Institution Section, and during the following days, June 29 to July 3, when the general Home Economics Association meets, opportunity will be afforded those interested in Institution Management to have repeated and informal conferences and round tables which will be of the greatest advantage to all.

Any special questions or suggestions for subjects may be sent to the following chairmen of committees: Housekeeping supplies, Mrs. Dewey (Lake Placid); Laundry management, Miss Balderston (Teachers College); per capita costs, Mr. Cole (Harvard University); dietitians, Miss Atwood (Johns Hopkins); school lunches, Miss Boughton (Philadelphia); cafeteria management, Miss Hunn (Cornell University); dormitory management, Miss Goodrich (Simmons College); waste, Miss Watson (McDonald Institute, Guelph); courses of instruction, Miss Arnold (Simmons College).

Inquiries regarding rooms, rates, programs, etc., may be addressed to Miss Martha Van Rensselaer, Cornell University, Ithaca, New York.

Emma H. Gunther, Teachers' College, is secretary of this section.

ANNUAL MEETING OF THE AMERICAN HOME ECONOMICS ASSOCIATION

The annual meeting will be held at Cornell University, Ithaca, N. Y., June 28-July 3, inclusive. June 28 will be devoted to section meetings, and June 29-July 3 to the general program.

The program will be arranged to allow for group conferences as well as for the presentation of general topics for discussion. To this end, the forenoon will be given over to general subjects; the afternoon in part to conferences and in part to organized excursions. Evenings will be held for formal addresses and entertainments, both social and educational.

On Tuesday, the 27th, at seven-thirty o'clock, the meeting of the Executive Committee will be held in the Home Economics apartment.

Wednesday, the 28th, will be devoted to meetings of the various sections of the Association.

Institution. Miss Sarah Louise Arnold, Simmons College, Chairman.

Extension. Miss Gertrude McCheyne, University of Utah, Chairman.

Science. Miss Ruth Wheeler, University of Illinois, Chairman.

Programs will soon be announced for these sections.

Wednesday evening there will be an informal reception, a roll-call of members illustrated with lantern slides. Some one will be asked to speak for each institution represented.

Conferences on textiles and clothing, Home Economics in elementary schools, and journalism in Home Economics, will be held during the meeting.

Friday evening the women students of the Department of Home Economics will present the play "Omelet and Oatmeal," a musical comedy. The proceeds will be used for the Ellen H. Richards Fund.

Several times during the program, moving pictures relating to Home Economics subjects will be presented in Bailey Hall.

All institutions are invited to send material illustrating their work. It will be on exhibition for the Association and will be returned to the institution sending it.

Ithaca affords a most unusual opportunity for outings and recreation. For each afternoon trips will be planned to some points of interest, including Watkins Glen, The George Junior Republic, Enfield Falls and Taughannock Falls. Every one is urged to bring strong shoes and old clothes for tramping. Stop-over tickets for Ithaca may be secured on through tickets to New York. Special railroad rates will be announced.

Rooms will be secured so far as possible in Cascadilla dormitories. One of the men's residential halls will be opened to men attending the conference. Rooms may be secured for an average of \$1.00 a day, and board may be secured at the Home Economics cafeteria at a moderate cost.

The next BULLETIN of the Association will give the full program. Information regarding program and accommodations may be secured by addressing the Department of Home Economics, Cornell University, Ithaca, N. Y.

THE
Journal of Home Economics

**For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics**

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Showing rod for paper towels, fire extinguisher, and garbage pail.

THE KITCHEN, GEORGIA NORMAL AND INDUSTRIAL COLLEGE. (See page 353).

THE Journal of Home Economics

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No. 7

MUNICIPAL MARKETS OF THE NORTHWEST¹

MRS. FREDERICK CALKINS

Ellensburg, Washington

Municipal markets are not usually considered necessary or profitable in cities of a population less than 25,000, and very few cities of less size support public markets. Therefore in discussing the municipal markets of the Northwest we are really considering the markets of only four cities: Spokane, in Eastern Washington; Seattle and Tacoma in Western Washington; and Portland in Oregon—cities ranging in population from 100,000 to 350,000.

A market to be a success must come in response to a popular demand from the people of that community, and after its establishment must be loyally supported by them. A city which is surrounded by small truck gardens makes a better market center than a city adjacent to the larger farming areas. Perhaps this is one reason why there are larger and more numerous markets in Seattle than in Portland though the cities are somewhat the same size. Foreigners and a middle class population take more kindly to municipal markets than any other class of people; the very poor are more given to buying on credit, and nearly all markets are run on a cash basis.

Strictly municipal markets (meaning public markets built, owned, and managed by the municipality) are very few as compared with the so-called city or public markets which are managed by private individuals or corporations.

¹ Presented at the Eighth Annual Meeting of the American Home Economics Association, Seattle, 1915.

Seattle has seven public markets, but at only two of these (Pike Place and Westlake) are there stalls available for the farmers and producers. There are about two hundred of these stalls (wagons are no longer allowed here) which the farmer draws by lot, and for this privilege pays ten cents—the only charge.

Spokane has several markets but they are all privately owned and managed and are chiefly large emporiums for the convenient association of commercial interests rather than the bringing together of the producer and the consumer. At one of these markets (Second and Stevens Streets) during certain hours each day, the farmers are allowed to back their wagons up to the curbing where they stand in the hot sun or the rain because they are not permitted a stall in the market building.

Portland opened its first municipal market two years ago though there was considerable public sentiment against it. It occupies two blocks on Yamhill street with somewhat substantial and artistic looking stalls on both sides of the street. I believe the only charge to stall holders is a small amount, probably enough to pay for a caretaker or janitor. The city gives free lights, free garbage collection, and free rent and water.

The original idea in establishing this public market was to make a place where the small producer could sell his products directly to the consumer; and, with the operating expense reduced to the minimum, it was intended that the consumer would be benefited by a reduction in food prices. This market has proved immensely popular with the masses and is crowded with buyers; but it has not accomplished its purpose of reducing the cost of living. There seems to be a regular combine among the stall-holders, and prices are absolutely uniform in every stall. The stalls are rented very largely—perhaps 60 per cent—by Japanese who are supposed to be farmers but in reality are simply retailers or sell on commission. There may be a very few producers selling their own products directly to the consumer, but the market is so largely made up of retailers who have had nothing whatever to do with the growing of the products they sell, that the Retail Grocers Association of Portland has recently made a strong protest against the market as now conducted. They maintain that it is clearly a case of discrimination against retail grocers and other taxpaying merchants, for the city to conduct this market at the expense of the city and the public for the benefit of certain individuals, some of whom are using said market place for the purpose of retailing produce gathered from different parts of the state.

Whether it is or is not an expense to the taxpayers is a question aside; the real question is: Does the market accomplish the purpose for which it was established, i.e., has it brought the actual small producer in contact with the consumer, and has it reduced the price of food stuffs? It would seem to have failed of its purpose in both these respects, and what is true in the case of the Portland municipally managed market is true in the majority of other cities having strictly municipal markets.

Tacoma has one municipal market, consisting of a single row of stalls, each about ten by twelve feet square, the display tops slanting towards the sidewalk. The enclosed space beneath is used for storage. There are about thirty-five of these wooden stalls extending for two blocks along the curbing of "D" Street—or Market Street as I believe it is now called. The stalls extend for a foot or a foot and a half on the sidewalk, and the rest on the street, and are slightly elevated to allow for cleaning underneath. The sidewalk and stalls are protected by a shed roof which extends over the sidewalk to the large building facing the row of stalls. There are small shops and stalls in this building but they are not under city control.

This city, like most others, built this market in order to eliminate the evils of the middleman's charges, and to benefit the small grower as well as the consumer; but absolutely no attempt is made to rent the stalls to the actual producers and practically every stall is held by a retailer simply. The stalls have a sliding scale of rent, starting with \$25 per month for the first stall on the corner (considered the most advantageous location), 50 cents less for the next stall, and so on.

The stall holders also pay for the light and water, and the stall prices are the same in winter as in summer—the rentals averaging the city a revenue of about \$500 per month. This more than pays for the expense of repairing, the general upkeep, and the market master's salary, and so is really a profit to the city.

The food ordinance of Tacoma provides that no food shall be exposed or displayed for sale upon any street or sidewalk, but makes an exception of the public market. This is manifestly "class discrimination" and the other merchants are very well aware that the city cannot enforce this section of the ordinance and are quick to take advantage of this situation. A request from the Food Inspector that the grocers take in their sidewalk display is sure to be met with the reply: "Make the Market stop displaying on the sidewalk, and *then* talk to us! You are

breaking the ordinance yourselves, and you are breaking another one too—obstructing traffic!”

In every city market there are presented two almost universal problems: to secure healthy competition which will do away with price fixing, and to eliminate dishonesty in its various forms. Most cities fail to accomplish this; but one of the middle western cities is said to have solved this problem. The city has absolute control of the market, and the full responsibility is placed upon the market superintendent who is given full rein. Whenever a stall is rented it is with the express stipulation that the renter can sell there only so long as he deals fairly with the public and so conducts his business that it does not become detrimental to the best interests of the market. In the beginning there were a few dealers eliminated from the market and since then there has not been a single complaint of dishonesty in two years, and there seems to be no suggestion of fixed prices.

It would seem that if municipal markets were given more thought and attention by the municipality, and their management placed in the hands of a superintendent of understanding and honesty who would not be subservient to political influences (willingly or unwillingly as the case may be), and the rentals of the market kept at cost and become neither a liability nor a profit to the city, such markets would perform a needed service to the community.

It is very apparent from the constantly increasing number of public markets that these institutions have proved exceedingly popular with the mass of the people. They are usually located near the business centers and many housewives go in person to the market places to select from the wide variety so temptingly displayed.

Even if the prices are uniform there still remains the advantage of a larger quantity from which to choose, and under the eye of the purchaser there is less chance of shortness in weight, quality, or measure. There is also a tendency to purchase less if cash is paid at the time of purchase, and doubtless the cash purchasing is often a saving to the housewife for this reason.

The foreigners certainly understand the cultivation of berries, fruits and vegetables, and the artistic arrangement of the wares at the stalls is a joy to behold. Surely the beauty-loving souls of these Orientals and children of the Southland must find no little satisfaction in the wonderful variety of colors at their disposal. The displays are usually arranged with a splendid regard for color effects and most pleasing

results as to light and shade. Frequently the heavier, darker foodstuffs such as the shining purple egg-plant; young beets, or red-cheeked apples, and the luscious grapes or rich-toned plums, are surrounded and contrasted by fruits and vegetables of a lighter coloring. The brilliant red tomatoes nestle against a tray of pale green lettuce heads, and the smooth green cucumbers are piled near a mound of shining white celery. The pale lemons and the darker hued oranges are most attractive against a background of parsley, and the pearly whiteness of the new corn shines forth from a border of crisp watercress. During the berry season there are bright strawberries, the duller toned raspberries, blackberries and the huge logan berries to add to the wonderful variety of color. The equable climate of this coast and the rich soil produce truly wonderful fruits, vegetables, and berries and a large assortment of palatable foodstuffs may be found the year around.

OLD BAKE OVENS IN PENNSYLVANIA¹

EDITH M. THOMAS

The quaint old-time "Dutch" ovens or "Backofen" as Germans call them, built of either brick or stone, in a separate building not far distant from the house, or at one end of the farm-house kitchen, are seldom if ever used by the up-to-date housewife of the present day; in fact these old ovens once so common in Pennsylvania are so rarely seen, as to be practically unknown to the present younger generation, especially those dwelling in cities.

I have frequently heard my grandmother affirm "Sweeter bread than that baked directly on the hearth of an old 'Dutch' oven, 'twas impossible to procure;" and I do not think the veracity of this statement will be questioned, when I inform you of the fact that very soon after the arrival of my grandparents in a distant city, where they purchased a home with the expectation of residing permanently, my grandfather complied with my grandmother's urgent request to have an oven built, exactly like the one in which she had baked bread at their old home on a Bucks County farm.

¹ A paper presented at the annual meeting of the Bucks County, Pa., Historical Society at Doylestown, January 25, 1916.

The efficient housewives of our day may be interested in the old-time method of preparing sponge for those hearth-baked loaves of bread. Usually the sponge for bread was mixed in an old fashioned, wooden dough tray, somewhat similar in shape and size to a small steamer-trunk; this was partly filled with flour; the sponge or batter was mixed at night in one end of this tray, surrounded by a wall of flour, any preferred liquid and home-made hop yeast being used. It was then placed near the open fire place until the following morning, when the well-risen sponge was stiffened from the remaining wall of flour surrounding it, thoroughly kneaded, then moulded into shapely loaves, which were then placed in well floured straw baskets, or "Brod Corvels," as they are called by the Pennsylvania Germans. In the meantime a fire of hard wood had been built on the hearth. When the oven was thoroughly heated to the correct temperature for baking, and the dough in baskets had raised sufficiently, the hot, charred pieces of wood were raked from the oven. With a primitive mop, called a "swab," consisting of a piece of cloth fastened to one end of a long pole (which was immersed in a pail of cold water), the brick floor of the oven was thoroughly cleansed ready for the well raised loaves; the baskets containing the sponge were quickly turned upside down onto a long handled, broad, wooden shovel used exclusively for this purpose, and with a dexterity only acquired by continued practice, the loaf was quickly transferred from the shovel to the hot oven floor.

When the oven had been filled to its utmost capacity with bread, cakes, and pies (the Pennsylvania German's love for pie is proverbial), the oven door was adjusted to prevent the escape of heat and was held in place by the handle of the shovel resting against it, in the primitive manner in which things were done in those days. In a short space of time, the entire week's baking had been accomplished more expeditiously than if a modern range had been used for the purpose. Bread in olden times, especially rye loaves, baked directly on the hearth, possessed a sweet, nutty flavor obtained in no other way.

It may be interesting to know that these hearth-baked loaves of bread were usually about forty-six inches in circumference and from three to three and one-half inches in height.

These "Dutch" ovens usually, when measured across, were four and one-half feet wide, five and one-half feet long, and thirty inches high, above the solid wall built of stone with a heavy clay foundation. The door opening was eighteen by twenty-one inches and these ovens were frequently built within a stone and frame building eight by twelve feet.

STANDARDS FOR HIGH SCHOOL TEXTBOOKS IN HOME ECONOMICS¹

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After a period of several years when no high school textbooks were being published we have had eight or ten books offered within the last two years, and rumors of many more in the making. These books mainly consider foods, nutrition, and household management, and do not include the clothing and applied art problems. The problem of selection of a good text from among the number offered is our problem at present, and this brings to our attention the need for discussion of the standards by which to judge the adequacy of a given book.

Before discussing any specific points I should like to raise the question of a clear definition of our need as teachers of Home Economics. Do we need more books to assist us in organizing the material for our high school classes rather than more high school textbooks? Should these take the form of comprehensive laboratory manuals with suggestions as to method of presentation, or do we need books on methods of presentation and organization of both laboratory and theoretical work? For books to be put into the hands of the students do we need a multiplication of our present type of high school textbooks, or do we need more comprehensive material of each of the aspects—laboratory manuals, and text material or subject matter? It is a very interesting commentary on our present use of textbooks that a large percentage of teachers are still dictating laboratory experiments and subject matter to their classes, their explanation being that they are unable to find an adequate textbook.

The conventional method of treatment in books on Food and Nutrition is an arrangement of combined text and laboratory manual which may be divided into specific lessons or treated in topics under such general headings as fruits, vegetables, meats, and fish. Sub-topics under these headings are: (1) Composition of food materials illustrated by more or less formal experiments, by tables of general composition, or merely by statements of the significant composition in terms of protein, carbohydrate, and mineral matter; (2) a statement of food value and use of foods in the body; (3) reasons for and methods of cooking;

¹ Contributed by the Home Economics Committee of the Central Association of Science and Mathematics Teachers.

(4) cost; (5) recipes and experiments to be used in class work. The books also usually contain several introductory chapters on equipment and its care in the laboratory, fuels, and general methods of cooking. This material is often further augmented by suggestions of class room management for the teacher, or in many cases chapters are given on the value of Home Economics in school work. The subject matter covered may be specifically foods, or it may include several or all of the various phases of Home Economics. A large number of these textbooks are the formation in book form of actual class room experience with a definite group of students. There are definite advantages in this plan but also some notable disadvantages, as it is very difficult to adapt to other school conditions so clearly defined a method of presentation as this entails.

Is it possible to write textbooks with enough and sufficiently comprehensive material to be usable by all types of high schools, or should each distinctive type of course demand its special type of book? If the latter is true, our greatest need would seem to be to develop more variety in our conception of the organization of textbooks. The following types of presentation are suggestive of different points of view in presenting cooking: (1) The use of experimental cooking to develop the principles of cooking; (2) the study of cost and time value as basic aspects leading up to later work in household management; (3) the cost and nutritive value of foods dominating other phases. If it seems advisable to develop these specialized forms one of the fundamental considerations of a text should be a definite method of developing the subject in a way to bring out the specific values desired. In general, the arrangement of laboratory work in texts or the laboratory manual part of the book more definitely defines the method than the informational or text material. For example, if my basic idea is to develop a study of cost in relation to quality and time spent in preparing foods, my text material might be similar to other books, with possibly a greater emphasis on marketing conditions, but my laboratory work, including experiments and their applications, would be arranged to emphasize different methods of using different qualities of food materials, the systematic use of the pressure and fireless cookers and other labor-saving methods and devices, and a regular use of meal serving at definite stages in the course. Could you use any of our present textbooks for all of these different cases? Can you conceive of any type of textbook that could meet all of these needs? If this issue is significant, a textbook should either

clearly define a specialized method of presentation or offer adequate material to allow selection on the part of the instructor.

A second problem on which our point of view varies in judging textbooks is the adequacy of our high school books from the subject matter standpoint. The subject of Home Economics covers a vast range of material—scientific, technical, and economic—and it is separable into definite subjects such as marketing, cooking, dietaries, and household management. Home Economics in the high school means anything from a half unit to a four unit course. In the half unit course an instructor must decide what phases of her problem she will emphasize and frankly eliminate those which, though in themselves interesting, have no direct significance in the general course or for the personal needs of the student. In the four unit course, on the contrary, where subject matter is studied under these different headings, textbooks should cover each phase of Home Economics in a comprehensive way. Obviously the textbook which attempts to cover the whole problem in an elementary way meets neither of these needs. As an illustration of this, if I wish to give a class significant work on marketing, there is no textbook available at the present time which offers enough material for my class. I am dependent upon references from various sources to augment the sixteen-page chapter in the only book offering any organization of this subject. There is also very little adequate material dealing with the subject matter of nutrition and dietaries. In attempting to simplify material for high school classes, most of our textbooks eliminate rather than develop our subject in a clear, explanatory way which notes general principles and explains applications. An interesting illustration of the inadequacy of subject matter in our high school textbooks is that of a recent book, the editor of which made, as a great point in its recommendation, the statement that the entire subject of Home Economics to be presented in a two year course is covered in 334 pages. For what other subject would it be a matter of congratulation that the single textbook could be used for a two unit course?

A third point in standardization of textbooks is the problem of the advisability of the survival of the lesson by lesson text. By this I mean the books which subdivide the material into a series of lessons rather than under topical headings. While this type of book may have some definite values for the inexperienced teacher, there are certain limitations and losses imposed by this form. The material is not readily available for reference. The continuity of subject matter is lost. In

following such a textbook effective teaching is often subordinated to covering a definite amount of material in a given lesson. This form of textbook also, if put into the hands of students, allows the teacher little opportunity for originality in method of presentation.

A fourth value by which we judge our textbooks is the adaptability of the book to the needs, understanding, and interests of the high school girl. As was suggested earlier in this discussion, many of the high school texts present a simplified form of material that has been presented to the teacher herself in normal schools and universities, rather than a reorganization of this material from the standpoint of the high school girl's interest.

I have attempted to summarize what would seem to be the principal issues in judging our various texts. The chief criticism of the current textbooks might be classified as: (1) An attempt to cover thinly far too much ground; (2) poor balance between text material and laboratory directions which take the form of padding with recipes and insufficient subject matter; (3) vagueness in the relation of the subject of Home Economics to science material of other courses. A textbook in cooking should either presuppose previous science work and emphasize all the applications of science principles, or else it should definitely include enough work in the sciences to make the practical applications of chemistry, physics, and bacteriology not mere statements of fact, but significant applications of general principles. (4) The problem of cost of foods is often either ignored or else treated in such an isolated way that the student has no conception of the relative cost of food materials or labor expenditure and no knowledge of the basic economic principles underlying price. (5) In the attempt to simplify and condense material for high school students many statements are made as final truths which current science is either questioning or disproving. This is especially true in regard to nutrition.

SOME SUGGESTIONS AS TO DOMESTIC SCIENCE
EQUIPMENT

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The question of equipment for laboratories is one of continual interest to domestic science teachers. The precious \$5 or \$10 to be spent for the small school must be spent with as much wisdom and discrimination as the \$500 for a more elaborate and complete laboratory. Probably the most effective of school-kitchen equipments evolve—growing, changing, developing as the work grows, changes, and develops. Too few or wrongly chosen utensils prevent efficiency. Too many, even if suitable, are a burden. The teacher who has only two dish-pans for a class of twelve is no worse off than the one who has to find storage room for useless and unnecessary tools. But between these two extremes are the many kitchens where a reasonable amount of money is to be spent at the discretion of the teacher. She must be able to discriminate. She cannot afford to be penny wise and pound foolish. Most of us, however, get our knowledge of real values by the expensive method, known as “experience.”

Let us consider first the question of the appearance of the room as a whole and then some of its details. Is it too sweeping a statement to say that *every* school kitchen *everywhere* ought fairly to scream the word “cleanliness?” The school kitchen in “Spotless Town” must live up to the highest standards set by any housekeeper and the school kitchen in Bugaboo must set standards. So there you are!

As far as appearance goes it is almost impossible to over-estimate the value of white paint. White tables, white stoves, white cupboards, if they are clean, look so, and if not clean they show it; in either case, “Murder will out.” Even white oilcloth has been known to teach the lesson of cleanliness better than many words. Of course both paint and oilcloth have disadvantages as coverings for table tops but to one who has tried many kinds the disadvantages are outweighed by the satisfaction of having a white kitchen. The costliness of tiling for table tops is almost prohibitive; the composition tops are usually dark in color and absorbent; wood, if well seasoned and fitted is satisfactory but very hard to get, especially in small towns where the carpentry is not always done by skilled workmen. White oilcloth ought to be

used only when the table top is free from obstructions and the tacks can be under the rim of the table. With ordinary care it may last for one school year but if in constant use it may need one renewal. When gas plates or stoves of various kinds rest on top of the table and necessitate the use of zinc, the remaining surface is far easier to keep clean if painted with a heavy coat of enamel. The constant scrubbing wears it off in spots, but one renewal during the year is not extravagant for upkeep.

There is a real and a valuable psychological effect produced by white paint. The whole tone of the room is changed. From a condition which might be called negative cheer it is changed to something positive. There is an incentive to keep things clean because there is genuine satisfaction as a reward. A dining room in which there was a large clumsy table, six chairs, a serving table, a china closet, of erstwhile "Golden Oak" finish, was transformed by the generous use of white paint. With a soft tint on the walls, table cover, curtains, and runner of blue and white Japanese toweling (which is both washable and in good design) the room is cheery and delightful although the sun doesn't reach it. Possibly the lack of direct sunshine makes the whiteness more desirable. So much for white enamel paint as a silent but effective helper in the war on dirt which all of us must wage with diligence till we die. Just try it!

To be quite orthodox, we have usually felt a kitchen ought to have a hollow-square table with the usual arrangement of drawers for small utensils, and cupboards below. Only one who has had to inspect low cupboards knows the joy of having all individual equipment on shelves in plain sight, behind glass doors. The expense of having sufficient cupboard space to accommodate a class is not very much greater than the building or buying of ready-made domestic science tables. The accompanying photograph shows the arrangement of utensils for a group of two. The two lower shelves hold bowls (two sizes), custard cup, measuring cups (one aluminum, one glass), soap dish, matches, knives, forks, spoons, and scissors. The Dover egg beater, strainers, and plate scraper, hang. The second shelf holds the two double boilers, two enamel baking dishes, two saucepans, one small rolling pin (behind the saucepans) and two small serving plates. The top shelf in each cupboard is used for pitchers, teapots, casseroles, and other utensils that are not in constant use.



Cupboard with utensils for two students.

In this kitchen the walls are light yellow, all woodwork white, the bowls blue striped, the cutlery and utility pan aluminum, and all gas pipes and individual stoves nickel plated.

Each pupil has a gas burner with removable grate, a bread board fitted into the table, a glass towel rod fastened to the table and a stool which slips underneath; the cupboard, with utensils for the group, is a step or two behind her.

There ought to be in every laboratory an effective and easily handled fire extinguisher, which everyone is taught to use. The proverbial blanket which is there for the purpose is likely to collect moths and is a nuisance.

The garbage pail is very often an eyesore in an otherwise attractive kitchen. The kind whose cover is lifted by pressing the foot on a pedal enables one to come with both hands full. These are procurable in at least three sizes in white finish.

A tray wagon is invaluable, especially when supplies have to be distributed to several kitchens. One satisfactory kind costs \$6.

A glass towel rod is used for a paper towel holder by having a little piece cut out of the knob at one end so that the rod can be lifted out. Paper towels are indispensable. A glass rod for each pupil or a continuous nickel rod have helped solve the problem of keeping the towels in good condition. The general class towel rack is the despair of many a faithful teacher.

In a kitchen which was notably inconvenient because there were no individual burners and no room for gas plates on the table, a series of nine burners was placed against a concrete wall and has proved very satisfactory.

School kitchens are not as a rule both efficient and attractive, but it is possible to have them so. There is a bewildering variety of tools; some are labor savers, and some are labor makers. Some are ugly and some are good looking. Usefulness and durability should not be sacrificed to beauty, but all three qualities can be secured. The rage for aluminum is partly due to the housekeeper's desire to have attractive utensils. A teacher can manage to eliminate the old and unsatisfactory utensils for the newer and better kinds without being extravagant. In any case the school equipment ought not to be stagnant and unchanging, but always in a state of evolution toward perfect efficiency.

WASHING AND CLEANING¹

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I am not in any way an expert in the art of removing spots; but it seems to me that a classification of the different methods might be helpful in clearing up our ideas and in showing which are the most promising methods for future development. I therefore suggest the following tentative classification:

1. Mechanical removal.
2. Dissolving in a liquid.
3. Peptizing with a liquid.
4. Peptizing with a solution.
5. Peptizing with a peptized colloid.
6. Peptizing in several stages.
7. Adsorption by solid.
8. Peptizing with a liquid and adsorption by solid.
9. Change of substance forming the spot.

A few illustrations will make this classification clearer. When we brush off dried mud we are removing mechanically. The removal of sugar or of some dyes by water is a case of dissolving in a liquid. A more striking case is the extraction of iodine by alcohol. The characteristic of this class is that the substance of which the spot is composed forms a true solution in the liquid.

Before giving illustrations of peptizing with a liquid it is perhaps wise to define the word "peptize." When a substance is dispersed or suspended in a liquid without forming a true solution, we say that it is peptized by the liquid. In muddy water, the mud is peptized by the water. India ink consists essentially of carbon peptized by water. In these two cases it is easy enough to see that there are particles in suspension. With Congo red in water, it is quite impossible to see any suspended particles, but it is possible to separate the Congo red from the water by filtration through a suitably prepared collodion filter. Although olive oil seems very transparent, it is probable that the stearin is only peptized by the oil and that it is not in true solution. If we wash out of cloth a dye which forms a colloidal solution instead

¹ Presented before the Biological Section of the American Chemical Society, University of Illinois, April, 1916.

of a true solution with water, we are peptizing the dye with water. The removal of chocolate by water is another case of the same type because chocolate does not readily dissolve in water. The removal of iron rust from iron by means of kerosene is a case of peptization, because the iron oxide does not dissolve in kerosene.' The removal of grease by benzine, gasoline, or naphtha, is another case under this heading because the grease does not form a true solution in these organic liquids. The removal of rosin with benzine comes under the same head.

There are not many cases of peptizing with a solution and this is put in more for the sake of completeness. Some acid dyes can be stripped with sodium sulphate solution; paint stains can sometimes be removed with sodium carbonate solution; and soot can be removed to some extent by means of a dilute caustic soda solution. I do not know whether the removal of grease by borax belongs here or whether the borax actually saponifies the grease, probably the former.

Under peptization by a peptized colloid we have all the cases in which soap is used. Soap does not dissolve in water but is readily peptized by it. The theory of washing with soap has been put on a satisfactory basis by Spring.³ It is to him that we owe a very striking and instructive experiment. If we filter a fine suspension of rouge or soot through filter paper, some of the particles stick to the filter paper or, as we say, are adsorbed by it. If the liquid is filtered several times through the same paper, the water will finally run through clear, the particles of rouge or soot adhering to the previously adsorbed particles and finally clogging the pores of the filter paper. If a soap solution be poured on the filter, a red or a black filtrate is obtained at once, almost as though one had punched a hole in the bottom of the filter with a glass rod. The soap forms a film round the rouge or the soot, removing the particles from the paper and thus allowing them to pass through. All the rest of the particles follow just as a log jam breaks when the key log is started. At first sight it seems as though the soap must have broken up the carbon or the rouge into finer particles which then passed through the filter, but there are two reasons for rejecting this hypothesis. In the first place, the experiment does not succeed if the rouge or the carbon is too coarse, and there is no apparent reason why the soap should not break up coarse particles if it can break up fine ones. In the second place, Spring showed that we are dealing with an adsorption of soot by filter paper. If the black filter paper be reversed and washed with water,

³ *Zeit. Kolloidchemie*, 4 (1909), p. 161; 6 (1910), pp. 11, 109, 164.

only the carbon which is not in immediate contact with the paper is removed.

Soap acts in a similar way in removing dirt or grease from fabrics or from the hands. The soap forms a film round the dirt or the grease, removing it from actual contact with the fiber or the skin, thus simplifying the task of washing it away with water.

Ox-gall is also a colloidal solution and acts like soap. When discussing the cleaning of woollen carpets, Owen³ says:

Beat and shake them thoroughly in a good breezy place to get out all dust. Have the floor scoured clean and, when dry, replace the carpet, and, if still much soiled and dingy, go all over the carpet with ox-gall and water. The secret of success is to clean and rinse them thoroughly without soaking them through. A pint of fresh ox-gall is put into a pail of clean soft water. With a brush rub up a lather upon about a square yard of the carpet by dipping the brush in the ox-gall and scrubbing with just the movement that raises a lather, but does not remove the fiber from the carpet. Now with a soft cloth or large sponge, not too wet, remove the lather, aiming to do this by frequent wringing out of the sponge in clear fresh water. After all is done, open the windows and the carpet will soon dry out.

On page 114 of the same book Owen says that "skim milk and water with a very little glue or gelatine in it, made scalding hot, will restore rusty black crape. If clapped between the hands and pulled gently till dry, it will look as good as new." I do not know what makes black crape look rusty but I know that the important thing in the skimmed milk is the peptized casein. Since gelatine does not form a true solution in water, the beneficial action is due to a peptized colloid and we do not need to consider what part is to be ascribed to the casein and what to the gelatine.

Peptizing in several stages occurs when we treat a spot due to grease, rosin, or paint with oil which peptizes the substance forming the spot and which can itself be peptized readily by another colloid such as soap. Owen says (p. 90):

Grease spots are of the most common occurrence. To remove these from white fabrics is comparatively easy, but to remove them from colored fabrics without at the same time doing injury to the color is often very difficult and sometimes impossible. Very much depends upon the skill and perseverance of the operator. Good soap and water is the most universal solvent for

³ Owen: *The Dyeing and Cleaning of Textile Fabrics*, 1909, p. 100.

greasy matters, and where there is no reason for not wetting the goods, soap and water should be tried. Grease spots from carriage wheels, sewing machines, or any source containing iron from wear of bearings, or carbon from any source, red lead, or any insoluble colored substance, should first be rubbed thoroughly with some oil that is itself capable of being washed out with soap and water [such as] lard or fresh butter, olive oil, linseed oil, etc.

Much depends on how this is done. Don't be afraid to use plenty of oil, butter, or lard, and then work with the fingers, bending the cloth back and forth as if you were breaking a wire, until upon holding it up to the light you see that the dark matter of the spot is completely and evenly distributed and worked up with the oil. When sure this result is accomplished, then work in a thick, cold, watery soap mass obtained by boiling up sliced laundry soap in water and allowing to cool. If on touching the dry soap bar to the tongue, it does not "bite," it should have some sal-soda added to it in the boiling. Work the prepared soap into the cloth where the spot is, until the oil in its turn is worked up with the soap as thoroughly as the spot was with the oil. Now, and not before, wash out the spot with soapy water. Only with very old spots will any trace remain after this treatment. Grease spots succumb very well if rubbed up with kerosene, the kerosene rubbed up with new milk and the whole then worked with soap and water.

In regard to paint Owen says (p. 103):

Paint, when fresh, washes out as readily as any grease spot. As it ages and oxidizes it becomes more and more difficult to soften and remove it. . . . Oil the spot and rub the oil in patiently, striving to blend the spot with the oil. If the spot is very old, allow it to lie with the oil upon it for several days, rubbing occasionally to see if the paint is softening. A few drops of turpentine, kerosene, or any solvent for greasy matters may be added and worked in. Old lead paint is very persistent. Finally, wash out like a fresh grease spot.

Grease or paraffin may be removed by placing blotting paper over and under the spot, and then applying a hot iron. The grease is adsorbed by the paper and this method of cleaning therefore belongs in Class 7. A number of variations are possible. Fuller's earth may be substituted for the blotting paper and fruit stains for the grease. Wax may be removed with French chalk. Without using heat white woolen shawls can be cleaned by sprinkling them with rice or potato starch which adsorbs the dirt. Starch can also be used to take out iodine. An old-fashioned way of cleaning wall paper is to treat it with dough. Painters use bread as an eraser for charcoal drawings; this is an adsorp-

tion rather than a mechanical removal. Velvet may be cleaned by sprinkling thoroughly with magnesia or corn meal, covering and letting stand twenty-four hours.⁴ Furs may be cleaned with corn meal. The removal of grease paints from the face with cold cream comes under this head if one considers cold cream as a solid. A very interesting case under Class 7 was brought to my attention by Mr. C. P. Long of the Globe Soap Company. Starched lace curtains are placed in water with a diastase which converts the starch into soluble starch. When this is peptized by water, the dirt comes off with the starch without any rubbing. Practically this is not the same as starching a dirty but unstarched curtain and then removing the starch, but I think that it is the same in principle.

According to Owen (p. 175), small spots on broadcloth may be removed by treating the spot with a mixture of a pipe-clay, alcohol and turpentine. The alcohol and turpentine peptize the substance forming the spot and the pipe-clay then adsorbs it. Automobile grease can be removed fairly well in the same way, substituting fuller's earth for the pipe-clay. These are instances of peptization with a liquid, with subsequent adsorption by a solid. I have called this a separate class; but it could be put in under a sub-head if one preferred.

In the last class I include all the methods which involve a change in the nature of the substance forming the spot. Under this head we class the methods involving the chemical action of acids, alkalies, oxygen, hydrogen peroxide, chloride of lime, potassium permanganate, sodium hyposulphite, sulphur dioxide, and others. While these substances are usually effective, they are very likely to damage the fabrics.

I believe that the most interesting field for research in washing and cleaning is a study of the methods of adsorption by solids.

⁴ Balderston. *Laundering*, p. 113.

THE SOLUTION OF ANTIMONY FROM ENAMELED COOKING UTENSILS¹

ELIZABETH W. MILLER

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The purpose of this series of experiments was to investigate the possibility of the solution of harmful substances from enameled dishes in the cooking of foods. Harmful substances which may be present in enamels are lead, arsenic and antimony.

Lead has always been used in glazes applied to crockery ware, which must be fired at low temperatures. The peculiar advantage of lead glazes lies in their wide range of fusion, their low viscosity, and their brilliancy.² While successful leadless glazes with low fusion point have been made, they lack the brilliancy of the lead glazes, and the loss from defective pieces is usually greater. The harder porcelain glazes used on fine tableware which can be fired at high temperatures usually contain no lead. In the case of sheet steel enameled ware, for which a glaze of great brilliancy is not necessary, it has been possible to use other substances to act as a flux.

At the time when enameled cooking utensils began to supplant crockery ware in Europe, there had been considerable agitation over cases of lead poisoning ascribed to foods cooked in dishes covered with a lead containing glaze. Laws had been passed forbidding the sale of dishes which yielded more than 2 mg. of lead per liter when boiled for one-half hour with 4 per cent acetic acid. Grünwald,³ a German authority on enameling, says that one very important reason for the popularity of this new enamel ware was the fact that it was advertised as being free from lead. Authorities seem to agree that lead has never been generally used in enamels. It was found, however, in one saucepan examined in this series of experiments, and so it seems that it is used occasionally.

There is always added to enamels some substance to make the glaze opaque.⁴ This is usually tin oxide. Other substances sometimes used are arsenic and antimony. Arsenic is said to be used only in enamels

¹ Presented before the Biological Section of the American Chemical Society, University of Illinois, April 20, 1916.

² Tech. Papers, Bur. of Standards, 31, Dec. 1913.

³ Grünwald, *Tech. of Iron Enamelling and Tinning*.

⁴ *Trans. Am. Cer. Soc.* 14 (1912), 740.

for decorative purposes. Because of its relative cheapness, antimony is being substituted for tin, especially in cast iron enameled ware, such as bath tubs. Its use in culinary utensils was forbidden by law in Germany and Austria because of its possible harmful effect. No such laws exist in France, Belgium, or America.³ Grünwald, the authority quoted above, contends that enamels containing antimony can be made so resistant to chemicals, that practically none would be dissolved in the ordinary cooking processes. There could then, of course, be no objection to its use. In the experiments described below, however, dishes of one particular make were found to be very readily attacked by foods, and to yield antimony in considerable amounts.

Tests were made, first for lead and later for antimony, on fifteen different dishes, some of standard make and some cheap. In only one case was lead dissolved in more than traces, and there its presence may have been accidental, since similar results were not obtained with other saucepans of the same variety. Antimony was extracted in considerable amounts from one dish. Therefore the time was spent chiefly on quantitative determinations of antimony dissolved by acetic acid and by various foods.

The experimental work on lead will be described first.

The dishes were filled with 4 per cent acetic acid, and boiled for one-half hour according to the method used by European investigators.⁴ This solution was then tested for lead by the colorimetric method described in Leach for the detection of traces of lead in the presence of tin, iron, and copper.⁵

Of the fifteen dishes so treated three saucepans of standard make which had been used in the cooking laboratory several months gave merest traces of lead. A fourth dish of the same make yielded slightly less than 2 mg. of lead per liter, three successive times. This result was so unexpected and so exceptional that two other tests were made to confirm the presence of lead.⁶ As previously stated, the comparatively large amounts of lead in this dish may have been accidental, since three other saucepans of the same kind gave only traces. It should be noted here, however, that this dish which had been used in the laboratory for over a year still gave almost as much lead as the maximum permitted by the laws of Germany and France. This disproves the statements

³ Mavasuer, *J. Nahr. Genussm.*, 15 (1908), p. 338.

⁴ Leach, *Food Insp. and Anal.*, p. 918.

⁵ Grünwald, *Enamelling on Iron and Steel*, 1909, p. 19.

sometimes made that all the soluble lead would be extracted the first two or three times the dish was used.

In the process of determining the lead, there was left, in each case, a considerable amount of a white residue. This was dissolved in sodium hydroxide, acidified with hydrochloric acid in excess, and this solution tested for arsenic, antimony, tin, aluminum and silica. In one case a heavy orange precipitate which formed when H_2S was passed through the solution proved to be antimony sulphide.⁸ Tin was present in small amounts in the extract from all the other dishes, but no test for arsenic was obtained. Some silica was also present.

The dish which yielded antimony was a cheap gray enamel kettle purchased at the ten cent store. The gloss was removed by the first treatment with acetic acid. After being used a second time the enamel had become much roughened, and a white powdery substance could be rubbed off with the fingers.

After it was discovered that antimony was dissolved from this kettle, several other dishes of the same make were purchased, and quantitative determinations made of the amounts dissolved. Two methods of treating the dishes were followed—first, the method used in testing for lead by boiling with 4 per cent acetic acid; second, by cooking various kinds of food in the dishes. A gravimetric method was used for determining the amounts of antimony dissolved by acetic acid. In the case of the foods, the organic matter was first destroyed and the antimony then determined volumetrically.

The gravimetric method followed was one given by Clarke and Henz⁹ and used by Landrum¹⁰ in the analysis of enamels. The antimony was precipitated by H_2S , dissolved in yellow ammonium sulphide reprecipitated by hydrochloric acid, and the pentasulphide reduced to the trisulphide by heating in a stream of CO_2 at a temperature of $230^\circ C$. In three successive determinations, 34 mg., 33.7 mg., and 31 mg. of Sb_2S_3 or 26.5 mg., 26.3 mg. and 24.2 mg. of metallic antimony were obtained.

Since only small amounts of so strong an acid as 4 per cent acetic would ever be eaten at one time, an investigation as to the amounts of antimony dissolved by foods cooked in such dishes was undertaken.

It was first necessary to find a method by which the organic matter

⁸ Stieglitz, *Qual. Anal.*, 2, p. 107.

⁹ Treadwell, *Quan. Anal.*, p. 188.

¹⁰ Trans. Am. Cer. Soc., 12 (1910), p. 144.

of the foods could be oxidized without volatilizing the antimony, and by which the antimony could be recovered quantitatively. W. Schmitz¹¹ in analyzing rubber goods for antimony destroyed the organic matter by a modified Kjeldahl oxidation. To test out this method 31.8 mg. and 54.6 mg. of Sb_2O_3 were added to two portions of boiling grape juice. The grape juice was transferred to Kjeldahl flasks and 20 cc. of sulphuric acid added together with a very small drop of mercury. The flask was then heated on a sand bath until the organic matter was completely charred. Considerable foaming occurred during this process, so that constant watching was necessary to prevent loss. Later this difficulty was largely overcome by evaporating the fruit juice to about 20 cc. before adding sulphuric acid. After charring, more acid and 2–5 grams of potassium sulphate were added and the flask again heated till a clear solution was obtained. In this solution the antimony was determined by a carefully controlled iodine titration.¹² It was first cooled and then diluted sufficiently to prevent charring of the tartaric acid which was added to keep the antimony in solution. Finally the mercuric sulphate was reduced to metallic mercury, and the pentavalent antimony reduced to trivalent by the addition of 1–2 grams of potassium bisulphite. After heating again on the sand bath until the sulphur dioxide was completely driven off, the contents of the flask was made up to 250 cc. and filtered.

The determination was then completed according to the volumetric method given by Mohr. Two hundred cubic centimeters of the filtrate was just neutralized with sodium carbonate, made alkaline with a saturated sodium bicarbonate solution, and titrated with $\frac{N}{10}$ iodine. A better end point was obtained by adding an excess of about 0.5 cc. of iodine, and titrating back to the disappearance of the blue color.

In addition to these two experiments 173 mg., 96 mg., and 33 mg. respectively were dissolved with tartaric and dilute sulphuric acids, and the solution neutralized and titrated as before. The results from these five determinations checked within 0.2 per cent.

The method having been satisfactorily tested, foods were cooked in the dishes containing antimony, and the amounts determined as described. First, acid fruit juices—cider, grape juice, and cranberry pulp—were tried. Finally, spinach and milk were cooked in the dishes.

In the first series of experiments two new dishes were used, one 37 sq. cm. larger at the bottom than the other.

¹¹ Gummi, *Ztg.* 25 (1913), p. 1928.

¹² Sutton, *Vol. Anal.*, p. 151.

One hundred and fifty cubic centimeters of grape juice diluted with 100 cc. of water, 250 cc. of cider, and 200 cc. of cranberry pulp in the order given were boiled for forty-five minutes in each of the two dishes. The fruit juice was then transferred to a Kjeldahl flask and the analysis carried out as previously described.

The amounts of antimony obtained were as follows:

From the smaller dish the grape juice extracted 6.2 mg., the cider 6 mg., and the cranberries 14.1 mg. From the larger dish, grape juice dissolved 3.3 mg., cider 3.6 mg. and the cranberries 9.4 mg.

The first point noted in these results is that the smaller dish yielded greater amounts of antimony than the larger. This is probably merely due to the fact that the cheap dishes are not always equally well fired, and consequently the enamel is not equally resistant to solvents.

The effect of these fruit juices on the appearance of the enamel was as marked as when 4 per cent acetic acid was used. The first cooking with grape juice removed the gloss and after the cranberries had been boiled in the dish the enamel felt rough and the fingers were whitened when rubbed across it.

The large amount of antimony found in the cranberries is interesting. Mavasuer also found in experimenting on lead glazes that cranberry sauce dissolved relatively large amounts.⁵ It is quite probable in this particular case that a thick pulp like cranberry sauce would, in boiling, actually rub off some of the enamel. Some of this antimony may not be in solution but simply held in suspension.

In the next group of experiments 250 cc. of undiluted grape juice and an equal amount of cider were boiled for forty-five minutes, four successive times in two dishes of exactly the same size and shape. This was to find whether the amounts of antimony dissolved increased or diminished each time the dish was used.

The amounts extracted by the cider were 2.5 mg., 5.5 mg., 3.3 mg. (some of the cider was lost in oxidation) and 7.8 mg. In the case of the grape juice 8.3 mg. were dissolved in the first cooking and 10.8 mg. in fourth.

These results show that for the first few times at least, the amounts of antimony dissolved increased each time the dish was used. This increase would probably not continue indefinitely, however.

The acidity of the grape juice and cider was determined by titrating with $\frac{N}{10}$ sodium hydroxide, using phenolphthalein as indicator for the cider. None was necessary for the grape juice. Undiluted grape

juice was found to have an acidity of 0.14 normal, the cider was 0.10 normal.

In comparing the solvent action of these fruit juices with that of 4 per cent acetic acid which is 0.67 normal, the weaker fruit juices seem to be much more effective. The largest amount of antimony dissolved in 1500 cc. of 4 per cent acetic was 26 mg., while 250 cc. of grape juice removed 10.8 mg. and 200 cc. of cranberry pulp contained 14 mg. It would not be fair to compare these results directly since there was relatively much more surface exposed to the small amounts of grape juice and cranberries than to the 1500 cc. of acetic acid; it would seem reasonable, however, that since antimony forms a large number of soluble organic compounds, these fruit juices should be very effective in dissolving this substance.

In a third experiment 125 grams of spinach (about one medium serving) was cooked in two dishes which had already been used for the fruit juices; 250 cc. of water was added and the vegetable cooked twenty minutes, after which the liquor and solid spinach were transferred to separate flasks.

In one case the liquor contained 7 mg. antimony, the solid spinach, 2.7 mg.; in the second case the liquor contained 3.9 mg., the solid spinach 2.3 mg.

A question arose as to the effect of the iron in spinach on the accuracy of these results. Clarke says that traces of iron need not be considered in this determination.¹³ To make certain, a dilute solution of ferric chloride was acidified, reduced with potassium bisulphite, neutralized, and titrated with iodine. The first drop turned the solution blue, so it was not considered necessary to make any correction for iron in the spinach. The other foods contained smaller amounts of iron.

Finally 200 cc. of sweet milk was boiled in each of the two dishes used for spinach, for a period of ten minutes, and then allowed to stand for an hour and a half. The results obtained here were 3.1 mg. and 2.3 mg. of antimony respectively, less than from the other foods but still considerable.

Summarizing briefly the results of cooking various foods in these dishes, it was found that in every case some antimony had been dissolved. Various factors seemed to influence the amount—namely, the acidity, the number of times the dish had been used, the amount of abrasion due to food rubbing against the enamel, and probably the tem-

¹³ Sutton, *Vol. Anal.*, p. 152.

perature and the length of time food was left in the dish, although no experiments were performed which directly proved these two latter points.

The fact that this particular enamel is so readily attacked would probably prevent its use by intelligent housewives, but among the poorer, less intelligent women it might be used without question. If the presence of antimony in foods is harmful, certainly the sale of such dishes should be checked.

As to the physiological effects of antimony, very little seems to be known except that antimony compounds act as emetics. I understand that the Public Service Health Laboratory is making a study of the toxicity of antimony compounds. According to the 1914 edition of Hare's *Therapeutics*, the medicinal use of antimony is no longer in favor with physicians. He says,

Tartar emetic is harmful if irritation of the stomach is present, or if renal inflammation is present. If one good sized emetic dose is not sufficient to produce vomiting it should not be repeated, but some other emetic or the stomach pump be used, lest antimonial poisoning complicate the case. The emetic dose must be large enough to be effective or none at all should be given. If this rule is disregarded, systemic changes come on with undesirable severity in those cases where emesis fails to occur because of small doses.¹⁴

In Bulletin 96 of the U. S. Public Health Service Hygiene Laboratory for 1914, a warning was given to mothers against the use for milk bottles of rubber nipples containing antimony.¹⁵ From six grams of the shredded rubber, subjected for one and one-half hours to normal saliva and saliva acidified with lactic acid, 0.1 mg. and 0.8 mg. respectively were dissolved. As a result of these experiments it was concluded that the use of such nipples might be dangerous.

The average dose of tartar emetic as given by the U. S. Pharmacopœia is 30 mg. for an adult and 3 mg. for a 15 pound infant, or 5 mg. and 0.5 mg. of metallic antimony respectively. On the basis of these figures $\frac{1}{4}$ cup (200 cc.) of cranberries contained almost 3 adult doses of antimony and $\frac{1}{8}$ cup (200 cc.) of milk contained six times an infant's dose.

It seems that this question of the physiological effects of antimony should be further investigated. We should know also how general has become the use of antimony in enameled ware.

¹⁴ Hare, *Textbook of Prac. Ther.*, 1914, p. 91.

¹⁵ U. S. Pub. Health Service Lab. Bul. 96, p. 56, 1914.

THE TRAINING OF THE COUNTY AGENT

KATHARINE A. PRITCHETT

State Agent in Charge Home Economics Extension, Maryland

Let us define the term "County Agent." A county agent is one who demonstrates, both practically and scientifically, subjects which pertain to home and community betterment. She may give these demonstrations to groups or clubs, or she may demonstrate to the individual farm woman or girl in the home. Before she can do the latter she must gain the confidence of the housewife. Often some simple service rendered the housewife at the psychological moment in a quiet, unobtrusive manner opens up the pathway to her heart. She resents the teacher, but she soon learns to welcome the coöperator and helper. Once the county agent has proved her ability in these capacities, she becomes a source of inspiration, then a counselor, and, as her field of activities leads her from the home into the community, she becomes a leader among the women of her county.

The problems confronting the county agent are as broad and as comprehensive as the family, the home, and the community. To meet these problems successfully she must possess a personality which disarms criticism and arouses enthusiasm, a power to sense situations quickly, and an adaptability which enables her to render the most humble service with a willingness that wins admiration.

When the work began, some thirteen years ago, the woman with practical experience in gardening, canning, and kindred subjects, who had the ability to gain the confidence of the farm woman, met the requirements for the position of county agent. During the succeeding years the work has developed until now the county agent's activities are highly diversified. She may give a canning or a gardening demonstration in the morning, a lecture on "Foods in Relation to Disease" before the Civic Club in the afternoon, and in the evening she may show the farmers and their wives how they may have running water in their homes.

The mail also proves very interesting. A letter may be received kindly requesting "the very best and latest methods of preserving eggs;" a postal, "please forward detailed information on coöperative marketing. Sincerely yours," etc.

Should one enter upon such a large field, presenting so many prob-

lems and possibilities as extension work, without the broad training of both the world and the school? Is this training to be only along the lines of household science? She who is to enter into so many household activities must have a broad training in household science and theory as well as practice if she is to compete with these activities successfully. But this is not all. The training of the county agent must be such as to broaden her sympathy for humanity, develop tact and self-control, and inspire her with an enthusiasm which she can pass on to others.

If, through a demonstration or lecture, a county agent can create a demand for the best in labor-saving devices and so lessen the expenditure of energy of the housewife; or create a desire to break from hampering traditions and methods of work or to grow a vegetable garden that the family may have a more wholesome diet; or awaken the family to a greater realization of their ability to help the community; or if she can transfigure drudgery—if she can do any one of these—the result is more far-reaching than half a dozen lessons which fail to create a demand for follow-up work. “The best extension service is that which leaves a community doing most for itself.”

Practical experience in organizing and developing Home Economics extension work through the medium of the county agent convinces me that the county agent's usefulness to her community is limited only by the amount of her training and experience and by her capacity to sense opportunities to render valuable service to the farm woman.

Does the training of a county agent affect the general organization? Undoubtedly. “Organization in the largest meaning of the word is a wise combination of materials, equipment and workers for the purpose.” The logical beginning, therefore, for an efficient organization is a scientific selection and assignment of workers who will give unscheduled cooperation and genuine lively and loyal support to the whole movement. Large sums of money, the best and most modern equipment, and most intelligently devised methods of work, will not increase the efficiency of the organization unless the county agent is fitted by nature and training for her duties. The untrained worker may be very practical, and practice is very necessary, but there is the larger side of the work—science—and this is the foundation for all practical work. A knowledge of either phase of the work exclusive of the other is a detriment to the highest development. No county agent should attempt to

instruct a farm woman, who usually has a varied practical experience, until she herself knows homemaking subjects both practically and scientifically.

If the home demonstration movement is to render the greatest service to the people it must be carried on by women fitted into the right place at the right time with the right training, guidance, and supervision. Science or practice alone stands for one-sided work. Science plus practice stands for efficiency.

STANDARD FOR IMPORTED MILK

Canadian health officials and inspectors of the United States Department of Agriculture are coöperating in securing sanitary shipments of milk.

Milk or cream imported into the United States from Canada must comply with the requirements demanded of dairymen by the Dominion of Canada authorities, as well as the requirements of the United States Food and Drugs Act. Dairy products which do not come up to these requirements are stopped at the international border.

Under this arrangement all dairies from which milk is shipped into the United States must attain a well balanced dairy score of 50 on the basis of a possible 100 points. Secondly, the product itself must meet the standards required of milk produced in the United States.

"AN INTERNATIONAL EPISODE"

The JOURNAL readers will remember that the American Home Economics Association voted at the Seattle meeting to become a member of the International Congress of Home Economics that maintains an office at Fribourg, Switzerland. We are glad to print the following letter received in answer to the report of this vote sent by the Secretary to the International Office.

OFFICE INTERNATIONAL DE L'ENSEIGNEMENT MÉNAGER

(FRIBOURG, SUISSE)

Fondé en 1908

FRIBOURG, le 24 February, 1916.

MRS. ALICE P. NORTON,

Hon. Secretary of The American Home Economics Association, Chicago

DEAR MRS. NORTON:

I beg to acknowledge the receipt of your kind letter of February the 1st and am glad to express to you the great pleasure I had in hearing about the vote of the American Home Economics Association seeing that way the opportunity of getting better acquainted with the American workers.

In accordance with resolutions passed by the International Committee at the Congress of Gand (Ghent) 1913 the Societies contributing by an annual subscription of at least fr. 100 shall have the right to be represented by a delegate in the Committee of the International Office. You only need to give your adhesion to the Federation, and as soon as you have proceeded to the nomination of your delegate, let us know your choice.

The library of the Office has now nearly one thousand books dealing with Household Science (in French, German, English and Italian). Till now we have been publishing the new works in each number of the Bulletin but we had no real catalogue. We are just busy elaborating one; as soon as it is ready, we are going to send you a copy that you may choose the books or periodicals you are desirous of obtaining.

Let me thank you very heartily and ask of you to be my interpreter to the Managing Editor and the other members of the Editorial staff for the very kind notice concerning our International Office in the JOURNAL OF HOME ECONOMICS, January, 1916. We shall be very glad to take up as soon as possible our regular activities.

Assuring you of my respectful consideration, I remain

Thankfully yours,

Le Directeur,

(Signed) LEON GENOUD.

AN OUTLINE¹

EDUCATION FOR THE HOME

1. The Family as an Institution
 1. Nature and history
 2. Legal regulation of marriage and divorce
 3. Reciprocal duties of husband and wife
2. Public and Private Aspects of Parenthood
 1. Ante-natal conditions
 2. Care of the child
 3. Reciprocal rights of parent and child
 4. Reciprocal rights of community and child
3. The Housewife as Director of Consumption
 1. Choice and maintenance of shelter
 2. Choice, preparation, and care of food
 3. Manufacture and selection of clothing
 4. Management, equipment, service, and accounts
 5. Participation in public control of interests affecting the home,
e.g., housing, health, food, industry, education, recreation
4. The Housewife in Relation to Aesthetic, Social, and Ethical Standards in:
 1. Recreation.
 2. Hospitality
 3. Philanthropy
 4. Citizenship

TRAINING ADAPTED TO THE NEEDS OF

1. Domestic Life
 1. Well-to-do woman in her home, i.e., administrator and spender
 2. Independent homemaker with limited income, i.e., housekeeper, cook, nurse, dressmaker, and cleaner
2. Gainful Employment
 1. Teacher of Home Economics and Household Arts
 2. Institutional manager
 3. Dietitian
 4. Visiting housekeeper
 5. Investigator
3. Effective and Progressive Citizenship

¹ Presented at the University of Chicago Quarter-Centennial, 1891-1916, by the Department of Household Administration.

FOR THE HOMEMAKER

CLOTHES AND THE INCOME

CHARLOTTE GIBBS BAKER

Woman's freedom from many of her former household duties has left her chief spender for the family. Many women who have not found more profitable use for their time make spending their chief occupation, and clothes the chief object of that spending. That the family income is not always wisely spent goes without saying; that there is an enormous waste in the expenditure for women's clothes all will agree. For those who seriously try to spend wisely, the problem is complicated by those who spend foolishly, as the demands of the latter help determine the offerings of the market, and influence the rapid changing of the fashions.

Statistics and budgets show that from five to twenty per cent of the family income is expended for clothes. Five per cent in the case of the very small income where the standard of dress is necessarily low, twenty in the case of the family of moderate income whose social standards make heavy demands on the wardrobe. These statistics however do not show with what success the family is clothed on these different amounts, and obviously there is a great variation in the results obtained by different women with the same amount of money.

If clothing were to be supplied for protection only, the problem of making the dress budget fit the income would not be difficult even in families of very moderate means. It is the demand for decoration, novelty, variety, and style, and the ever increasing demand for different dress for different occasions which makes the struggle never ending. It is the ever present desire on the part of a certain type of women to do as do the leaders of fashion, the actresses, and others in the limelight, which causes much of our inappropriate dressing. Women whose social demands do not require elaborate clothes wear them on the street, and strain every nerve, as well as the family purse, to keep up to the top notch of fashion.

The woman who spends wisely for clothes not only knows how to buy, but has definite ideals for her goal. The success with which she clothes the family depends on her personal taste and, in case the income is limited, upon her skill. This skill need not necessarily be skill in needlework, but skill in making the best of what she has, in combining materials, in utilizing left overs, and, most of all, in bringing out the personality of the individual by the clothes she wears. If fashion alone is the guide, extravagance and waste will result, and, while the family may be well dressed according to one standard, they may be exceedingly commonplace and utterly lacking in individuality of dress.

For a long time the schools tried to make up for the lack of home training by teaching sewing in the class room, feeling that by this method they were solving the clothing problem. They are now fast coming to see that the clothing problem is a much larger one, and that the knowledge of sewing is not necessarily the most needful thing. As much of the food formerly prepared in the household is now prepared outside, so much of the sewing has passed out and it can not be brought back, nor is it necessarily desirable that it should be. After sewing, the next thing taught was the study of textiles in order to give the buyer better standards in choosing materials. Now costume design, the study of hygiene, and the cost of clothing have been added, and the attempt is being made to set better standards in the whole problem of dress.

The clothes worn by many of our high school girls at the present time do not speak well for the standards of their mothers, or for the standards of the coming generation of mothers. It is with these girls that the ground is fallow for the planting of the seed, but those who plant must do so carefully. The shop girl is often blamed for the inappropriateness of her dress, but, if all women who shopped set a good example, there would probably be little need to criticize the girl behind the counter.

In spite of the fact that the streets are thronged with extravagantly and inappropriately dressed women, it is true that more and more women do dress appropriately. More and more women are studying the clothing budget seriously and are buying intelligently. At conventions of thinking women the appropriate, well groomed, inconspicuous dress of the majority shows a great improvement over the dress of such meetings not many years ago. Such women have studied the dress problem and found that a harmonious costume of good material, well made, following the more conservative lines of the fashion, may be

worn on many occasions. They have found that one costume which is perfect in all its details is better than several not so perfect. They have learned that dress should emphasize and not subordinate personality.

For the woman who is limited in her expenditures the problem is of course harder, and the need for skill greater. Here, too, a few well made clothes, not extreme in style and chosen with due regard to the occasions on which they must be worn, seem most desirable. Care in selection should be exercised so that one hat may be worn with more than one dress, that gloves and other accessories, and all the different parts of the costume may be harmonious. In the choice of color and material those things should be bought which will be appropriate to most occasions. A few well chosen accessories of good quality may be used over and over and in the end prove less extravagant than cheap ones.

The keeping of a clothing budget is exceedingly helpful, particularly in showing from year to year what things were economical and what extravagant. Each problem is an individual one and must be studied as such; a rule which works for one person may not work for the next. It may be great economy for the woman at home, who is skillful with her needle, to have several inexpensive dresses which she makes for herself, while for the next woman it is much better economy to have one good dress made to order. For one, ready made clothing may be very satisfactory, for the next not at all so.

Women are too likely to think of economy only in terms of dollars and cents. In comparing the cost of different garments the time element is often neglected. To one woman a ready made garment seems expensive because she compares it only with the cost of the material in a garment she herself makes, while she considers an article on which she has put hours of time cheap, if the cloth did not cost much. The length of life of a garment, the satisfaction gained from it, and the cost of maintenance must all be considered. A cotton and wool skirt may be inexpensive in the first place, but is a poor investment if it must always be at the pressers. Neither does a cheap dress that hangs in the closet because one does not like it prove an economy.

More training along artistic lines would undoubtedly lead to a better appreciation of the beautiful in dress, and consequently a reaction against the grotesque, as we often have it in our current fashions. One has only to look at an average collection of old photographs to see how much of the popularity of many of our designs in dress is due solely to

fashion, and not to intrinsic beauty. The original design of a costume worked out in beautiful materials by an artist, for a particular individual may have been beautiful. Modified for fat or slim, reproduced in inexpensive materials by the ordinary dressmaker, the beauty is often entirely lost, and, as a result, when the fashion passes the dress is useless.

It is only when we have high standards for our clothes, together with considerable knowledge of buying and skill in planning, that we can, with a limited income, get the very best results in dress. We need to spend less time and money and more intelligent thought on our wardrobes if we are to have time for the many other things so well worth doing.

CLOTHING BUDGETS

The following estimates for clothing budgets are taken from a leaflet prepared by the head of the Personal Service Bureau at Filene's in Boston. A comparison between this budget, with everything purchased readymade, and that of the Montana student, published in the April JOURNAL and commented on in this issue, where everything was made at home, shows that the total expenditure for each is about equal, but that the amount is differently distributed.

The following is one of the suggestions made to help in planning the budget.

In working out your plan, decide definitely whether your outfit is to center around a suit or a coat. If you have decided that it is to be a suit, purchase up to it in every detail, eliminating every other type of dress or costume. If it is to be a coat, dresses and accessories must be developed in your plan.

These plans may be rotated very effectively, working out one type of costume one year, the other, the following year, being careful to make harmonious selections that may later be combined together. The budget, of course, assumes some clothing on hand and represents the purchase for one year.

The prices given are those for which the goods were actually sold.

*The articles marked with a * were purchased at a basement sale.

This further estimate of the per cent to be used for each type of clothing in different budgets is suggestive.

SEVENTY-FIVE DOLLARS A YEAR

<i>Tailored Type</i>		<i>Coat and Dress Plan</i>	
Hats.....	47.9 per cent Outer clothes	Coat, Dresses.....	55 per cent Outer clothes
Suits.....		Skirts, Hat.....	
Skirts.....		Sweater.....	
Waists.....		Waists.....	
Negligee.....	21 per cent Under clothes	Negligee.....	17 per cent Under clothes
Underwear.....		Underwear.....	
Corsets.....		Corsets.....	
Shoes.....	16 per cent Protection clothes	Shoes.....	14.4 per cent Protection clothes
Stockings.....		Stockings.....	
Rubbers.....		Rubbers.....	
Gloves.....	15.1 per cent Sundry clothes	Gloves.....	13.6 per cent Sundry clothes
Neckwear.....		Neckwear.....	
Repairs.....		Repairs.....	

NOT OVER \$400 A YEAR

<i>Tailored Type</i>			
Hats, Coats.....	53.3 per cent Outer clothes	Shoes.....	12.8 per cent Protection clothes
Suits, Dresses.....		Rubbers.....	
Sweater.....		Hosiery.....	
Skirts.....		Umbrella.....	
Waists.....	16.2 per cent Under clothes	Sunshade.....	17.7 per cent Sundry clothes
Negligee.....		Neckwear.....	
Underwear.....		Gloves.....	
Corsets, Brassieres ..		Repairs.....	

A CAMP FOR COMMUTERS

Amusement parks, recreation grounds, and orchestral concerts are no novelty in the plans which street-car lines have tried as a means of increasing the volume of their business. Camp homes for people who must spend their days in the city during the summer are more of a novelty, but suggest an enterprise which, properly operated, might be very desirable.

Such a summer camp, called "Tent City," has been operated for two years by one of the Washington, D. C., street railways. The attendance last summer was 150 persons for week-ends and 75 for a week or more, which was somewhat greater than the preceding summer. The "Tent

City" occupies an open, wooded hilltop near the terminal of the street railway and is very pleasantly situated, overlooking, as it does, the Great Falls of the Potomac. The frequent street-car service makes it convenient of access and the fact that the road passes through some beautiful Virginia country makes the trip to and from the city more agreeable for commuters.

The "Tent City" consists of a group of some 25 tent cottages scattered in regular order over the grounds. Each tent has a wooden floor and a large back porch, is electrically lighted, and is furnished with enameled bedsteads, blankets, bed linen, towels, rugs, wash hand stand, chairs, etc., in fact, a reasonably generous equipment for camping-out purposes. Arrangements are also made for maid service. Shower baths are provided for the residents and several toilets are conveniently located in the camp. The camp water supply comes from a spring which is said to be free from contamination, a statement probably true since there are no houses in the immediate neighborhood and the ground is high. Ice is supplied free for cooling the drinking water. There is a café in the camp—an open, wooden building—where meals are served at moderate prices. If one does not care to patronize the café, light housekeeping is permitted in the tents. Considering all that is provided, the rates, which are \$5 per week per tent regardless of the number of occupants, or \$15 per month, are not high. If the occupants prefer light housekeeping, an additional charge of 50 cents per week is made for an extra tent with open sides and fly top, for cooking purposes. The sides could be closed in with mosquito netting without difficulty and this might reasonably be expected from the management. Thorough screening of the kitchen and the dining pavilion should be insisted upon, not only for the comfort of the diners but more for their protection from flies, now absolutely known to be one of the most dangerous pests of a summer outing. Large flytraps of the sort used so often in municipal campaigns against flies would help greatly to diminish the number of flies, and their use should not be overlooked.

It is generally recognized that those who go into the country for summer outings, particularly in states and regions where health regulations are either inadequate or not well enforced, run a decided risk of typhoid and other diseases, including the sometimes mild and the sometimes violent disturbances we know as "summer complaint" and "ptomaine poisoning;" and a colony such as "Tent City" is of course subject to the usual dangers of temporary life in places not thoroughly equipped with

sanitary conveniences and not subject to strict accounting under municipal health regulations—though it is only fair to say that in this instance more has been done than in many a more pretentious summer colony.

The idea which has been developed here seems a good one and there is no reason why it should not be improved and carried out further. So arranged, an open-air place for spending leisure evenings, week-ends, or longer periods, is bound to benefit many who could not leave the city to escape the hot weather. Its moderate price makes it accessible to many. Generally speaking, it seems a logical development of the present rather widely spread movement for private camps located on river banks and hillsides, lakes, and elsewhere, which are now so commonly found near numbers of our large cities, where the mothers and children can spend the entire day, while the members of the family who must go to town to work, can make the journey to and fro easily, quickly, and at little expense.

SOME OTHER EXPERIMENTS ON THE COMPARATIVE COST OF HOMEMADE AND BAKER'S BREAD

MAY B. VAN ARSDALE AND DAY MONROE

Teachers College, Columbia University

Having read with great interest the article on the comparative cost of homemade and baker's bread, by Annabelle Marsh, in *THE JOURNAL OF HOME ECONOMICS* for January, 1916, we are more than ever impressed with the difficulty of standardizing such experiments so that the results obtained may be fairly compared. The cost of material from time to time, the richness of the recipe, the brand of yeast, the amount and kind of fuel used, and the basis upon which it is calculated, all being so variable, give rise to many different results. Therefore it may be of interest to the readers of the *JOURNAL* to consider a series of experiments which were carried on through a number of successive years, and under varying conditions, which have resulted in quite different conclusions from those drawn in the article above mentioned. The work was done by Miss Lucile French and Miss Elsa Frame in classes in experimental cookery.

(In all of our experiments the cost of homemade and baker's bread per pound has amounted to almost exactly the same figure, that is six cents. In these calculations the cost of the fuel has been considered but no value has been placed on the woman's time. The following are some of the results from which our conclusions were drawn:

Table showing the cost per pound of baker's bread purchased in New York City and vicinity

COST	WEIGHT IN OUNCES	COST PER POUND
\$0.10	20	\$0.08
.10	27.2	.058
.10	21.5	.074
.12	29.1	.065
.05	13.0	.061
.10	24.6	.065
.05	15.5	.051
.05	11.5	.069
.05	12.5	.064
.05	14.0	.057
.05	13.5	.059
.10	22.0	.073
.05	14.7	.053
.05	12.8	.062
.10	23.0	.069
.05	11.7	.068
.05	13.5	.059

Least for five cents.....10 oz.

Most for five cents.....15.5 oz.

Average cost per pound.....\$.063

In our laboratory experiments bread was made by several different methods, varying especially the amount of shortening and milk. By such variations in the recipe we found that the lowest price per pound, with the use of water and of lard for shortening, was about \$0.035, minus fuel, and the highest price per pound was about \$0.075.

On the basis of the following recipe, which we consider typical, the cost of a pound of bread, not including fuel, is \$0.059, which is, we believe, about the best figure per pound for a loaf of bread made in the home, which will compare favorably with good baker's bread:

$\frac{1}{2}$ cup milk	$\frac{1}{2}$ teaspoon salt
$\frac{1}{2}$ cup water	$\frac{1}{2}$ tablespoon butter
$\frac{1}{2}$ yeast cake	$\frac{1}{2}$ tablespoon lard
1 tablespoon sugar	3 $\frac{1}{2}$ cups flour (maximum)

All of these calculations are made on the basis of a four loaf batch to which one whole yeast cake was used. It may be argued by some that bread made in such small quantities will be high in price, and so in order to check up these results we utilized one barrel of flour for the purpose of bread making, keeping account of all ingredients added, using proportions stated in the recipe above. On the basis of one barrel of flour the cost of the bread per pound, without fuel, was \$.054, which compares favorably with that of the four loaf batch cited above.

Averaging the price obtained from the small quantity method, and that from the large quantity method, we have an average price per pound for a loaf of homemade bread, without fuel, of \$.056.

All of our fuel calculations are based upon starting with a cold stove, whether coal, gas, electricity, alcohol, or kerosene, heating the oven to the desired temperature for bread, and baking for about fifty minutes. This method is obviously a bit unfair to the coal stove which in many kitchens would remain hot during the entire day, and could be utilized for bread baking at any time.

On the above basis our quantitative measures for fuel added to the above cost per pound the following cost for the various fuels:

Coal.....	\$.0048
Gas.....	.004-.006
Kerosene.....	.0048

or an average of about $\frac{1}{2}$ cent per loaf for the common fuels.

This makes the cost of homemade bread, including fuel, about \$.06 per pound, almost exactly the cost of a baker's loaf per pound.

STUDENTS' CONTRIBUTIONS

COST OF BREAD

E. S. BURNHAM

University of Chicago, 1913

This work was done in 1913 at the University of Chicago under the direction of Elizabeth C. Sprague, now head of the Department of Home Economics at the University of Kansas.

Recipe for small loaf and for 1 lb. loaf of bread

INGREDIENTS	FOR SMALL LOAF (264 GMS. AV.)		FOR 1 POUND LOAF	
	Measure	Weight gms.	Measure calculated	Weight gms.
Liquid.....	$\frac{1}{2}$ cup (118 $\frac{1}{2}$ cc.)		203.8 cc. about $\frac{1}{2}$ cup	209.84
Fat.....	1 tbsp.	7.03	0.86 tbsp.	12.09
Sugar.....	$\frac{1}{2}$ tbsp.	2.187	0.43 tbsp.	3.76
Salt.....	$\frac{1}{8}$ tsp.	1.687	0.64 tsp.	2.90
Flour.....	1 $\frac{1}{2}$ cups	178.0	2.7 cups	306.16

Weight of flour to weight of loaf 178: 264 or 0.6742: 1.

For a 1 pound loaf 0.674 pounds of flour.

Weight of small loaf to weight of pound loaf 264: 454 or 1: 1.72.

Amount of various ingredients which may be used in a pound loaf, the amount of protein in grams, fuel value and cost of each

INGREDIENTS	AMOUNTS					
	Measure	Weight gms.	Protein gms.	Calories	Cost	Market value
Whole milk.....	203 cc.	209.84	6.93	152.2	\$0.0172	\$0.08 (qt.)
$\frac{1}{2}$ Whole milk.....		104.92	3.46	75.1	.0086	.08 (qt.)
Skim milk.....	203 cc.	210.94	7.17	79.	.0107	.05 (qt.)
Evaporated milk.....	3 $\frac{1}{2}$ tbsp.	54.52	5.23	93.67	.0120	.10 (16 oz.)
Condensed milk.....	1 $\frac{1}{2}$ tbsp.	26.7	2.35	89.3	.0067	.10 (14 oz.)
Sugar.....		3.76		15.	.00045	.05 $\frac{1}{2}$ (lb.)
Salt.....		2.90				
Lard.....		12.09	0.24	106.8	.00399	.15 (lb.)
Butter.....		12.09	0.12	96.	.00957	.36 (lb.)

Amount of various ingredients which may be used in a pound loaf, the amount of protein in grams, fuel value and cost of each—Continued

INGREDIENTS	AMOUNTS					
	Measure	Weight gms.	Protein gms.	Calories	Cost	Market value
Flours.....						
Ceresota.....	2.7 cups	306.16			.01806	5.25 bbl.
Lily White.....	2.7 cups	306.16			.01548	4.50 bbl.
Soft Sp. Wheat.....	2.7 cups	306.16			.01376	4.00 bbl.
Baker's \$4.....	2.7 cups	306.16			.01376	4.00 bbl.
Baker's \$3.....	2.7 cups	306.16			.01032	3.00 bbl.
High Grade Patent.....			35.82	1112.7		
Baker's Grade.....			40.719	1122.8		
Low Grade.....			42.86	1122.8		
Yeast.....					.0025	

Food value and cost of a pound loaf of bread based upon the various ingredients used

DIFFERENT KINDS OF BREAD	PROTEIN gms.	CALORIES	COST
1. Whole milk, butter and Ceresota flour.....	42.87	1373.9	\$0.04778
2. Whole milk, lard and Ceresota flour.....	42.99	1384.7	.0422
3. Skim milk, lard and Ceresota flour.....	43.23	1313.5	.0357
4. $\frac{1}{2}$ Whole milk, lard and Ceresota flour.....	39.52	1309.6	.0336
5. Evaporated milk, lard and Ceresota flour..... (Milk and water 1:3)	41.30	1328.2	.037
6. Condensed milk, lard and Ceresota flour..... (Milk and water 1:9)	38.41	1323.8	.0317
7. Skim milk, lard, Baker's grade.....	48.13	1323.6	.03312
8. Skim milk, lard, Baker's grade \$4.....			.0314
9. Skim milk, lard, Baker's grade \$3.....			.02796
Skim milk, lard, Baker's low grade.....	50.27	1326.62	
10. Water, lard and Ceresota.....			.025
Water, lard and high grade patent.....	36.06	1234.5	
11. Water, lard and Lily White.....			.02242
Water, lard and Baker's grade.....	40.96	1244.6	
12. Water, lard and Baker's grade \$4.....			.02070
13. Water, lard and Baker's grade \$3.....			.01726
Water, lard and low grade flour.....	43.10	1244.6	

NOTE.—In making general estimates of cost and food value Ceresota was considered as a high grade patent, Lily White as a Baker's grade, and Baker's \$3 as a low grade flour. The amount of protein and fuel value was estimated from the table in Chemical Composition of American Food Materials, Bulletin No. 28.

GENERAL CONCLUSIONS REGARDING NUTRITIVE VALUE AND COST OF
"STANDARD LOAF"

The best loaf for home use seemed to be one made with skim milk, lard, and high grade patent flour. This had an excellent flavor, was fine grained, light and well raised, tender, of good color, and of moderate cost. For this reason this loaf was used as a standard of comparison.

Comparison of several kinds of white bread. Each comparison is with the "standard loaf"

VARIATION IN INGREDIENTS	VARIATION IN QUALITY OF BREAD	VARIATION IN PROTEIN CONTENT	VARIATION IN COST
Whole milk for skim	Slight improvement in flavor and texture	Little change	Raises, 18%
Butter for lard	Slight improvement in flavor and texture	Little change	Raises, 16%
With both whole milk and lard	Slight improvement in flavor and texture	Little change	Raises, 34%
Water for milk	Slightly darker, grain little coarser	Lowers, 16%	Lowers, 30%
Potato water for milk and water	Slightly darker, grain little coarser; rises more quickly	Lowers, 16%	Lowers, 30%
Evaporated milk (1:3)	Darker, little flavor of milk	Lowers, 4½%	Raises, 5½%
Condensed milk (1:9)	Good bread, not quite so good flavor	Lowers, 11%	Lowers, 11%
Lily White for Ceresota	Slightly drier, flavor not so good	Raises, 11%	Lowers, 7%
Lily White and water	Flavor not so good, more like Baker's bread	Lowers, 5%	Lowers, 37%
Water and low grade flour	Darker, flavor not so good. Fair bread.	Same	Lowers, 40% to 50%
Low grade for Ceresota	Darker, flavor not so good. Moist good bread	Raises, 16%	Lowers 12 to 21%
With no fat	Fairly good bread, not so tender, slightly drier	Lowers, ½%	Lowers 11%,
With no sugar	Slower in becoming light, as well raised, flavor not quite so good.	Same	Lowers, 1½%

EDITORIAL

The Journal as a Medium of Exchange. The following suggestions have been received from one of our correspondents.

I believe that it would help in our immense problem of knowing what each one is doing along lines of work which should be more nearly standardized than they are, if examination questions for courses were published. Perhaps if this were done, people would no longer ask in a course in clothing as one-tenth of the final examination, "In whose reign did people button the toes of their shoes up to their knees?" There are certain courses sufficiently well established, such as textiles, an elementary college course in food study, and dietetics, with the same prerequisites of science, so that these questions ought at least to be suggestive.

Can't you do something in regard to the questionnaire problem? I believe most thoroughly in this means of getting information, but a questionnaire often asks for only part of the information really desired, or else is a duplication to some extent of similar work. Would it be possible for a questionnaire to be published in the JOURNAL before it is sent out, so that if practically the same questionnaire has previously been sent out, or is soon to be sent, the prospective sender may be apprised of the fact, and, on the other hand, people may send in suggestions regarding the questionnaire that would make it of more general value?

The JOURNAL would gladly publish such questionnaires and examination questions, so far as space allows, if this would be of any real help. Another plan would be for each one sending out a questionnaire to deposit one copy in the JOURNAL office and to report the information obtained. A letter to this office from one intending to formulate a new list of questions would secure information in regard to work already done and might prevent repetition of much work. Often it might be possible to obtain the use of material already collected.

We have noted in another column two such questionnaires already received that would be available in this way.

We should like, further, to begin the collection of papers on various subjects, that might be loaned for a small sum, enough to cover postage and other expenses of handling, such as necessary recopying, and that

would be useful as a source of material for talks to be prepared for clubs or conferences, for those who have not ready access to libraries; and that would also serve as a means of information in regard to various types of work. For instance, a short time ago a request came from a teacher for information in regard to cooking in the country schools. If we could have supplemented the references we were able to give her by papers showing work that is being accomplished but that will probably not be published we could have given her more substantial help.

There frequently comes into this office material that is excellent and helpful, but that is either similar to work that we have published or that for some reason does not fit our especial or immediate needs. Often the writers would be willing to have these papers used in the way that has been suggested. With a little coöperation we could have a selection of papers on a number of topics. In a similar way we should be glad to receive copies of examination questions if this is desired.

Comparative Costs. The various results of experiments on the comparative cost of homemade and baker's bread, illustrate the complications involved in what would have seemed to be a comparatively simple problem.

The experiments of Miss Burnham show a variation in cost of 84 per cent with different materials used. That is, taking a so-called "standard loaf" for comparison, and varying the kind of fat, the quality of the liquid, and the grade of flour, she finds that the cost is lowered from $1\frac{1}{2}$ to 50 per cent, or raised from $5\frac{1}{2}$ to 34 per cent. At the greatest extremes of cost, there is little change in the protein content, although in other combinations this is raised or lowered. Though further experiments are undoubtedly needed to verify their accuracy, these results explain easily some of the different conclusions reached.

Another difficulty arises in the cost of fuel, since gas may vary from 25 cents a thousand feet to \$1.50 or more, while coal and electricity have almost as great a variation.

The value of the labor involved is still more difficult to determine. A statement was made in one student article published that "the time was not considered at all, for two reasons; first, in doing this work we had in mind the housekeeper; preparation of foods is a part of her profession and therefore her time is already paid for. The same thing is true in regard to cooks and maids who are now almost entirely paid by the week and not by the amount of work accomplished." From one

standpoint this would seem perfectly true, but it involves a false economic principle. To realize its absurdity, apply the same statement to each kind of work done. Not only must each task performed bear its share of the total amount expended for labor, but also its share of overhead expenses, including rent and depreciation.

We seem not to have made substantial progress in the fifteen years since the A. C. A. in their report on homemade and prepared food stated:

Just what the price of a homemade loaf is, and, provided fuel and labor are included in the cost, how nearly this price approximates the price of the article purchased outside of the house, few of even the most practical housekeepers would be prepared to say.

Yet it is as true now as then that

before practical constructive measures can be taken to simplify and perfect household machinery, there must be an accurate knowledge of the present facts of daily living and of their relation to other phases of the world's activity; for any evolution of housekeeping must be conditioned by the laws that govern the industrial and social world at large.

COMMENT AND DISCUSSION

To the Editor of the JOURNAL:

In the January number of the JOURNAL were published some figures on the cost of homemade and baker's bread which were so different from the results I had obtained that I questioned them. Since then I have kept some data that I am sending.

As will be seen I have two different calculations, one for bread made exactly as Mrs. Marsh made it, the other for compressed yeast bread. I cannot see how she gets 108 ounces of bread from 13 cups of flour. At first I thought probably she used a heaping coffee cup, but, figuring from her cost, she uses 3.3 pounds of flour, and gets $6\frac{3}{4}$ pounds of bread. I wish I could.

Data on home made bread. Quantities and costs, by methods given in the January JOURNAL

Weight of 13 cups flour.....	52 oz.
Weight of dough when put in pans.....	80 oz.
Weight of 3 loaves of bread.....	72 oz.
Cost of bread from 13 cups as given in JOURNAL.....	\$0.1973
Cost of 24 ounces as given in JOURNAL.....	0.0438
Cost of 1 lb.....	0.0292
Cost of 24 ounces (my data).....	0.0657
Cost of 1 lb.....	0.0438

Compressed yeast bread. (My data throughout)

3 teaspoons sugar at 7½ cents per pound.....	\$0.0025
3 tablespoons lard at 15 cents per pound.....	0.014
48 ounces flour at 3½ cents per pound.....	0.105
1 cake compressed yeast.....	0.02
3 cups liquid. 1½ of milk at 9 cents.....	0.0375
28 cubic feet gas at 80 cents per 1000.....	0.0224
	\$0.2014
Weight of bread 66 ounces cost.....	\$0.2014
Cost of 24 ounces.....	0.0732
Cost of 1 lb. (including cost of fuel, not labor).....	0.0488

Labor, ¾ hour.

CHARLOTTE G. BAKER.

By consultation with the May JOURNAL it will be seen that Mrs. Marsh's weights were 66 ounces instead of 52. Her weight per cup was therefore above the standard; her price per pound of flour less than that given by Mrs. Baker. This adds emphasis to the difficulty of obtaining satisfactory data on what would seem to be a simple experiment.—THE EDITOR.

Miss Bevier adds these figures that illustrate also the increased cost in a few years.

I. Bread data (for 4 loaves)

Flour, 62 ounces or 3.9 pounds at 3.4 cents per pound.....	\$0.133
Sugar, 8 teaspoons or 1.4 ounces at 5.6 cents per pound.....	0.005
Crisco, 4 teaspoons or 0.6 ounces at 16.3 cents per pound.....	0.006
Yeast (compressed), 1 cake at 2 cents.....	0.020
Total cost of ingredients.....	0.164
Gas, 28½ cubic feet at \$1.00 per thousand.....	0.029
Total cost of bread.....	0.193
Weight of bread.....	85 oz. or 5.3 lbs.
Cost of 24 ounces.....	0.054
Cost of bread per pound (exclusive of labor).....	\$0.036

The cost of labor has not been included because of its variability, due to time used and value of workers' time.

II. Bread data from U. S. Dept. Agr., O. E. S. Bul. No. 52. Isabel Bevier 1894-1896

Flour, 47.75 pounds at 2.25 cents per pound.....	\$1.08
Potatoes, 2.32 pounds at 2 cents per pound.....	0.05
Sugar, 0.28 pounds at 5 cents per pound.....	0.01
Yeast, 5.19 pounds.....	0.09
Salt, 0.66 pounds.....	0.01
Total cost of ingredients.....	1.24
Weight of bread.....	65.75 lbs.
Cost of bread per pound (exclusive of fuel or labor).....	0.019

The Journal of Home Economics:

In reply to your request, I am forwarding some new material on the cost of bread which merely confirms previous work, with later cost prices. This is the work of the classes in Economic Uses of Foods. These results have been checked and re-checked in class work and so we feel sure of them.

ELIZABETH C. SPRAGUE,
University of Kansas.

Cost and fuel value of one pound loaves of bread (materials without cost of fuel or labor)

NO.	KIND	INGREDIENTS USED	GMS. PROTEIN	FUEL VALUE	COST
1	White Bread	Water, Zephyr Bread Flour, lard, compressed yeast.	31.0	1203	0.03218
2	White Bread	Water, White Loaf Bread Flour, lard, compressed yeast.	32.0	1213	0.03218
3	White Bread	Water, Gold Medal Bread Flour, lard, compressed yeast.	32.0	1213	0.03955
4	White Bread	Water, Queen of Pantry Pastry Flour, lard, compressed yeast.	30.0	1203	0.03955
5	White Bread	Skim milk, Zephyr Bread Flour, lard, compressed yeast.	39.1	1281	0.03773
6	White Bread	Whole milk, Zephyr Bread Flour, lard, compressed yeast.	39.1	1348	0.04788
7	White Bread	Skim milk, Zephyr Bread Flour, butter, compressed yeast.	39.1	1281	0.04658
8	Whole Wheat	Skim milk, Whole Wheat Flour, butter	35.0	944	0.03456
*9	Raisin Bread	Skim milk, Zephyr Bread Flour, butter	42.0	1755	0.07163
*10	Cinnamon Bread	Skim milk, Zephyr Bread Flour, butter and eggs.....	52.0	2027	0.1455
*11	Cocoa Bread	Skim milk, Zephyr Bread Flour, butter and eggs.....	60.0	2227	0.1629
*12	Nut Bread .	Skim milk, Zephyr Bread Flour, butter and eggs.....	57.0	2159	0.1607

* The fancy breads made from same proportions of liquid average $1\frac{1}{4}$ - $1\frac{1}{2}$ pound loaves when baked.

Prices of Flour, 1916

KIND	AMOUNT	PRICE
	<i>lbs.</i>	
Gold medal.....	48	\$2.25
Queen of the Pantry (Pastry Flour).....	48	2.25
White Loaf (Local Kansas Wheat Flour).....	48	1.70
Zephyr (Local Kansas Wheat Flour).....	48	1.70
Whole Wheat Flour.....	48	1.44*

* Usually priced by the pound, in this case 3 cents.

Prices of other ingredients

MATERIAL	AMOUNT	PRICE*
Whole milk.....	1 qt.	\$0.083
Skim milk.....	1 qt.	0.025
Butter.....	1 lb.	0.35
Oleomargarine.....	1 lb.	0.25
Lard.....	1 lb.	0.175
Eggs.....	1 doz.	0.25
Walnuts.....	1 lb.	0.60
Raisins.....	1 lb.	0.10
Cocoa.....	1 lb.	0.45
Sugar.....	1 lb.	0.05
Cinnamon.....	1 oz.	0.05
Yeast, Fleischmann's Compressed.....	1 cake	0.02

* Prices for 1914-15. No changes for 1916 except in sugar.

We have some further experiments on a local Kansas flour, using dry yeast and the long process, showing that a 22 oz. loaf of bread made with milk and potato cost \$0.044 (24 oz., \$0.048), with potato and water \$0.038 (24 oz., \$0.0425) and with water alone \$0.037 (24 oz., \$0.0403). We were comparing this with the 22 ounce 10 cent baker's loaf. We are also comparing the relative volume of the two types of bread but this work is not finished.

THE QUESTION BOX

Conducted by a committee of the Science Section of the American Home Economics Association. Chairman, Prof. Amy Louise Daniels, University of Wisconsin, Madison, Wis. Questions may be sent directly to Miss Daniels.

Question: Will you please tell me about the relative keeping capacity of baking powders: 1. alum, 2. phosphate, 3. tartrate? It seems to me that baking powder should be judged not only on its original price, purity, carbon dioxide capacity when fresh, and physiological effect, but also by its capacity to be stored well covered in a dry place.

Answer: "The keeping qualities of a baking powder must certainly be considered in determining its total value. The bi-carbonate of soda as component of a baking powder is easily obtained in a dry condition. This is true also of the starch used as a filler; and, of course, particular care should be used by the manufacturer to have these constituents as dry as possible. The difficulty of obtaining the acid component in a dry condition varies with the acid component selected, and, when this is cream of tartar, there is no difficulty whatever; and a well made cream of tartar powder has excellent keeping qualities, if properly packaged.

"Dried or burnt alum is not particularly hygroscopic, although the different alums vary in this regard; soda alum is the most hygroscopic.

"Acid phosphates are very liable to absorb moisture; and it is sometimes difficult to dry them thoroughly without, to some extent, reducing their values. This is particularly the case where phosphates and alum are mixed.

"Tartaric acid in the free state keeps very well, if properly protected. It must be recognized that there is no mixture of ingredients in a baking powder which will keep indefinitely without deterioration, under commercial conditions."—A. MCGILL, *Chief Analyst of the Inland Revenue Dept., Ottawa.*

Question: "Have you a recipe for making jelly from cactus fruit?"

Answer: Exhaustive studies of the uses of the prickly pear and other cacti for food purposes as well as for feed for live stock have been made by the New Mexico Agricultural Experiment Station and the United States Department of Agriculture, the results being reported in New Mexico Station Bulletin 64, and United States Department of Agriculture, Bureau of Plant Industry Bulletin 74 and 116. These publications can be consulted in most large libraries.

Generally speaking, the cactus fruits, which have many food uses, yield thick sirups or pastes rather than jellies. Whether this is due to a lack of pectin or of acid, or of both, seems not to have been determined. A lack of acid would naturally suggest the use of lemon juice and a lack of pectin the use of an extract of the white portion of the orange peel with the cactus-fruit juice. Red cactus-fruit juice, evaporated to a thin paste, has been used, at least experimentally, to color apple jelly. If one wishes recipes for drying cactus fruits and for making various pastes and sweets from these fruits, they can be found in Bureau of Plant Industry Bulletin 116, mentioned above.

It is possible that further information may be secured from the director of the New Mexico Agricultural Experiment Station, Mr. Fabian Garcia, at State College, New Mexico.

Question: Does the water in which cabbage is cooked, if consumed by some people, act as a poison in the system. If so, why?

Answer: We know of no reason why the water in which cabbage is cooked should produce any ill effects. On the contrary it has been found by McCollum and Kennedy (*Journal of Biological Chemistry*, 24, (1916) p. 499) to contain a substance which, when fed to pigeons suffering from polyneuritis, caused by an exclusive diet of polished rice, effects a cure.

Question: What determines the age at which the average baby can digest hydrated starch, such as is found in barley gruel (Robinson's patent barley flour) which has been boiled in water for twenty minutes?

Answer: The following is taken from *Diseases of Nutrition and Infant Feeding*, by Morse and Talbot, 1915.

"It has been proved beyond question that amylolytic ferments are present in the saliva and pancreatic secretions of the new-born infant, even if it is born prematurely. The amylase of the pancreatic secretion is more abundant after the first month than earlier. These ferments are present and active in the breast-fed as well as in the artificially fed infant. . . . There are, therefore, no physiological contra-indications to the use of starch in the feeding of infants, even in the new born. This fact does not prove, however, that infants ought always to be given starch or that they should be fed on foods composed largely, or almost exclusively, of starch. It merely shows that there is no reason why starch should not be given to babies if there is any good

reason for doing so. Clinical experience shows that in general it is not advisable to give starch under two months old, although there are many exceptions to this general rule. Clinical experience also shows that it is inadvisable to give large amounts of starch to babies before they are ten months old.

In this connection it is interesting to consider the variations in the amylolytic power of saliva with reference to the age of the infant. According to experiments reported by G. Finizio (*Rev. Hyg. et Med. Infant.*, 8 (1909), No. 3, pp. 224-249), the amylolytic power on an average increases progressively from birth to twelve months, the rate of increase being slower at first than later. Towards the eighth or tenth month the amylolytic power is double that observed during the first eight or fifteen days of life. At the age of one year the amylolytic power is little inferior to that of a child two or three years old and perhaps even to that of an adult. In infants of the same age the amylolytic power of the saliva is not always identical.

Question: If the barley gruel were cooked long enough to change part of the starch to dextrin would it be more easily digested?

Answer: The amount of starch, if any, changed to dextrin even after many hours of boiling (at temperatures above 100°C.) would be too small to have any appreciable effect on the digestibility of the substance in question; furthermore to change the starch to dextrin would defeat the purpose of the starch gruel, namely, to form a colloidal solution which will make the clot formed by the casein more friable. (Southworth: *The Influence of Starch on Infant Digestion, Journal of the American Medical Association*, 63 (1914), p. 1375.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

The Baby's First Two Years. By RICHARD M. SMITH. Boston: Houghton, Mifflin Company, 1915, pp. 156. \$0.75. By mail of the Journal, \$0.80.

The Baby's First Two Years is a sane, well written and easily understood book, giving information concerning the care and feeding of very young children. The author evidently has had much experience with young mothers, for he answers the many questions which naturally come to the inexperienced. These are presented clearly, concisely, and in such form that they are easily understood by those having no technical knowledge. The book is divided into three parts. Part one is made up of definite rules for the care and feeding of infants up to two years. Part two treats of the care of the mother, the general behavior of the very young child, and the best methods of traveling with infants. Part three gives, besides tables and charts pertaining to the normal development of infants, a full and very definite outline of a typical day in a baby's life. Here, not only the time, but very definite directions for the various processes that have to do with the care of the baby are given.

The description of the nursery, directions regarding the preparations for the new baby and the emphasis placed upon the use of certified milk for the bottle baby, mark the author as one who is not conversant with country conditions, nor with a knowledge of the home conditions of the larger portion of the American homes. The book, obviously, is written for the city mother of considerable means.

In the chapter dealing with infant feeding emphasis is placed upon the value of mother's

milk, and suggestions are given for the care of the mother at this time. But the author fails to appreciate that the general composition of mother's milk cannot be influenced by either food or exercise. The statement is made that "the percentage of fat, if low, may be increased sometimes by adding fat to the mother's diet, and by decreasing her exercise. These means are not efficacious unless the mother is underfed and tired. The fat, if excessive, may be reduced by cutting down the amount of meat in the diet and by increasing the exercise to the point of fatigue. . . . The protein, if high, may be lowered by increasing the exercise, not to fatigue, and by quieting the mind."

The formulas given for artificial feeding contain much fat, more than is advocated by many pediatricists; lime-water is also advised in certain cases of digestive disturbances. These formulas are the least valuable part of the book. However, only very few of these are given, because the author believes that the choice of a formula should be made by a physician. "Each child must have his food adapted to his individual digestive ability."

Students' Manual in Household Arts: Food and Cookery. By MARTHA L. METCALF. Indianapolis Industrial Educational Company, 1915, pp. 229. \$1.10. By mail of the Journal, \$1.24.

Miss Metcalf's book is not of a new type, but is a good example of the textbook for use in Home Economics classes. The usual ground is covered—the preparing and serving of the various types of food, and directions for the necessary household cleaning

and sanitation. The special value of *Food and Cookery* is the clear, direct presentation of the subject so that it can be made of immediate practical use. For instance, in the chapter on the serving of meals, the fundamental rules which make for an orderly, comfortable meal are given, and the family meal without a waitress considered. More formal service is given brief notice. This is as it should be if the work is to help the average family.

Under vegetables, one finds two classifications—one from the standpoint of nutrition—the other from the standpoint of cookery. These are followed by clear, definite rules for cooking, buying, and storing vegetables. Under milk, the difference between clean and dirty milk might well have received more emphasis, but blank pages bound into the text make convenient the addition of material by the individual using the book.

There are many recipes in good form, with brief and clear directions. Is it worth while to use the abbreviations C for cup, t for teaspoon, T for tablespoon, in printing? Money is not saved by this in printing, as it is in typewriting, and there is a loss in ease of reading except for the person constantly using such abbreviations.

The illustrations are helpful additions to the teaching of the text. Such pictures as that of a manufactured and home made double boiler on page 71; of the refrigerator on page 21; of a coal range on page 31, are very illuminating.

Industrial and Commercial Schools of the United States and Germany. A comparative Study. By FREDERICK WILLIAM ROMAN. New York: G. P. Putnam's Sons, 1915, pp. 382. \$1.50.

This book has a value over most other histories and descriptions of the Industrial and Commercial schools in that it considers the personnel of the students and teachers. The material on the Industrial Schools in

America is unfortunately not of a sufficiently recent date to make it worth while for any small department of Home Economics to purchase the book, although valuable to use if available in other departments.

Saving Fuel in Heating a House. By L. P. BRECKENRIDGE and S. B. FLAG. Washington, D. C.: Government Printing Office, 1915, pp. 35. \$0.05. Supt. of Documents. (Dept. of the Interior, Bureau of Mines, Tech. paper 97.)

This bulletin discusses the advantages and disadvantages of various fuels and of electricity; different methods of heating residences; and the best methods of firing different fuels. To the householder it gives valuable suggestions for selecting a heating system, for choosing the proper fuel, and for operating the chosen heater. The information about the handling of different fuels, control of drafts, etc., is specially useful. It points out general principles regarding operating conditions, "but it is impossible to give exact and detailed instructions for firing all heaters. The best method of applying these principles in a particular case can be determined only by experiment."

An interesting and very complete record of the fuel consumption in heating a small residence, is given toward the close of the paper.

Spices. By J. K. JANK. St. Louis: Author, 1915, pp. 121. \$1.50. By mail of the Journal, \$1.55.

This book, intended for manufacturers, grocers, etc., contains information regarding the botanical origin, geographical source, commercial use, and chemical composition of the principal spices. The federal standards for each spice are given. The common commercial grades and the more common seeds, herbs, and leaves, are described. A large amount of miscellaneous information, including federal and state laws on labeling and net weights, is also included.

PAMPHLETS RECEIVED

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- Our Daily Food.* By Laura Comstock, Amherst, Mass., 1916, pp. 8. (Mass. Bulletin for Farm Women No. 4, Feb. 1916.)
- Positions in Social Work.* By Edward T. Devine and Mary Van Kleeck. New York: School of Philanthropy, 1916, pp. 55.
- The Story of Textiles.* By the Newark Museum Association, Newark, N. J., 1916, pp. 32. Published in connection with the exhibit held in the Newark Public Library Feb. 1-March 18, 1916.
- A Survey of Twenty-three Rural Districts of Desoto Parish, La.* By Louisiana State Normal School. Natchitoches, La., 1915, pp. 31. (Normal Quarterly vol. 4, No. 4.)
- U. S. Public Health Service Exhibit at the Panama-Pacific International Exposition, San Francisco, 1915.* By W. C. Rucker and C. C. Pierce. Washington: Gov. Printing Office, 1916, pp. 29, \$.10. Supt. of Documents. (U. S. Public Health Service Sup. No. 27 to Public Health Reports.)
- Utilization of Cherry By-Products.* By Frank Rabak. Washington, D. C.: Gov. Printing Office, 1916, pp. 24, Supt. of Documents. (U. S. Dept. of Agriculture Bulletin No. 350.)
- Vitamines and Nutritional Diseases.* By Atherton Seidell. Washington, D. C.: Gov. Printing Office, 1916, pp. 8. (U. S. Public Health Service Reprint No. 325.)
- The Woman's Municipal League of Boston Bulletin, Feb. 1916: Dept. of Housing.* By W. M. L. of Boston. 109 Hudson Ave., Albany, N. Y. and 6 Marlborough St., Boston, Mass., pp. 79. (Vol. 7, No. 3.)

EXCHANGES

Many of us have read the story of two families, one living in one suburb, and one in another, both equally distant from the same city, who exchanged houses one summer in order to effect a change of scene without expense. The experiment worked very well, in the story; and readers of the story who have been inspired to imitate the plan in real life have found it most satisfactory. Change of air, we are accustomed to think, is an important part of a vacation; but perhaps change of scene is even more important,—the whole value of a vacation depending upon getting out of a rut, even a good rut.

This being so, vacations are more easily to be obtained than many other good things. Of course, it is seldom possible to exchange houses with one's neighbor; but it is almost always easily possible to exchange rooms with a member of one's family. It is amazing, the sense of change, and consequently of refreshment, obtainable by so simple a thing as this. A different bed, different windows, different walls—those make sleep more restful, and waking more cheerful, if one happens to be tired and in need of change—as a person usually is when tired. In families this plan of taking a vacation by exchanging rooms is excellent indeed.

A complete change of scene is, naturally, better than an incomplete one; but an incomplete one is immeasurably better than none. Let all stay-at-homes try it this summer.—*Home Progress.*

ARTICLES IN APRIL AND MAY EXCHANGES

The *Association Monthly* for May contains articles on Women and Unemployment, by Margaret A. Hobbs, p. 145, and The Federal Children's Bureau and its Chief, by Ethel M. Springer, p. 164. In the same magazine, Our Latest Experiment, by Mary E. Scott, p. 170, is an account of the Y. W. C. A. cafeteria in New York City.

Manual Training and Vocational Education for April contains an account of the meeting of the Illinois Manual Arts Association at Joliet. The May number contains an article on The Kitchen Boiler, by J. H. Tipton, p. 680, that while chiefly intended as a problem for high school students, gives the arrangement of the boiler and the water-supply pipes in a clear and useful way.

The *Independent* continues the articles by Martha Bensley Bruere, on The Habits of Women under Domestication including, April 3, Home vs. Family, p. 15; and April 10, The Waste of Saving, p. 61. The Saving of Waste, April 10, by Flora Thompson, p. 62, states the other side of household waste. The number for May 15 contains The Efficient Home, by Edward Earle Purinton, p. 246, and for May 22, Woman in the Market Place, by Margaret Deland, p. 286.

The *Modern Hospital* for May contains an article by the supervisor of the New York School Lunch Committee, Elizabeth M. Fee, on Feeding New York's School Children, p. 365. In the Department of Dietetics, p. 370, The Egg Problem, and The Control of Some Sources of Food Supply are worth notice.

Education for April contains a summary of five lectures on the child called Psychology and Youth, p. 170.

The *Hold Monthly* for April gives an interesting account of The Ramifications of a Great Dining-Car System, and for May publishes a "Boiled Down" Cook Book Idea, giving a basic dish as keynote for variations, p. 80.

Housewives League Magazine for May has a comprehensive article, Your Part in Saving the Nation's Eyes, by Edward Van Cleve, p. 45, and Model Menus in Place of Medicine, by Helene M. Pope, p. 41.

The *Outlook* for May 10 publishes an interview with Dr. Henry Moskowitz, president of the New York Municipal Civil Service Commission, on The Garment Trade and the Minimum Wage, p. 66, and also contains a picture of a Philippine Cooking Class.

School and Society, April 8, in The Cost of a College Girl's Education, by F. Stuart Chapin, p. 520, gives a summary of the Smith College girls' accounts kept for a year in response to the request of the Dean. The number for May 20 contains Home Economics, its Opportunities and Obligations, by Isabel Bevier, p. 737, a paper given at the meeting of the American Home Economics Association at Detroit.

The *Survey*, April 1, contains an article describing the Department of Agriculture's Demonstration and Extension Work, p. 22.

Harper's for May contains Who Feeds the Nation? by Elizabeth Sears, p. 860.

BIBLIOGRAPHY OF HOME ECONOMICS

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Contributions to the bibliography are welcomed. Please send material to the JOURNAL.

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The Carbohydrates and the Enzymes of the Soy Bean. J. P. Street and E. M. Bailey, *Jour. Indus. and Engin. Chem.*, 7 (1915), no. 10, pp. 853-858.

The Fireless Cooker and Its Uses. Helen Canon and Lucile Brewer, *Cornell Reading Courses*, Farm House Ser., 4 (1915), no. 95, pp. 273-298, figs. 8.

A Bread Leavening Agent. C. J. Kültümoğlu, *Centbl. Bakt.* [etc.], II Abt., 34 (1912), no. 1-3, pp. 76, 77; abs. in *Expt. Sta. Rec.*, 34 (1916), pp. 560, 561. The author describes a fermentation liquid obtained from the chick-pea (*Cicer arietinum*) and used in Bulgaria and Turkey.

The Milling of Rice and Its Mechanical and Chemical Effect upon the Grain. F. B. Wise and A. W. Broomell, *U. S. Dept. Agr. Bul.* 330 (1916), pp. 31, figs. 11.

The Banana and Its By-Products. E. Collin, *Ann. Falsif.*, 8 (1915), no. 83, 84, pp. 280-291, figs. 6; abs. in *Expt. Sta. Rec.*, 34 (1916), p. 460.

The Preparation of Porous Bread from Starch. W. Ostwald and A. Riedel, *Kolloid Ztschr.*, 17 (1915), no. 1, pp. 12-14, figs. 5; abs. in *Expt. Sta. Rec.*, 34 (1916), p. 460.

The Food Value of Different Types of Bread. A. Pugliese, *Rev. Gén. Sci.*, 26 (1915), no. 21, pp. 612-617, figs. 3; abs. in *Expt. Sta. Rec.*, 34 (1916), pp. 459, 460.

The Use of Blood of Slaughtered Animals as Human Food. F. Hofmeister, *München. Med. Wchschr.*, 62 (1915), nos. 33, pp. 1105-1108; 34, pp. 1146-1150; abs. in *Expt. Sta. Rec.*, 34 (1916), p. 459.

The Use of Rice in Bread-making. N. Novelli, *Giorn. Risicolt.*, 5 (1915), no. 5, pp. 68-72; abs. in *Expt. Sta. Rec.*, 33 (1916), p. 260.

A Standard Dietary for an Orphanage. Adele S. Jaffa, [Sacramento, Cal.]: State Printing Office, 1915, 2 ed., pp. 37.

Beri-beri in the Amazon Basin. A. N. Walcott, *Jour. Amer. Med. Assoc.*, 65 (1915), no. 25, pp. 2145-2147.

The Chemical Composition of Some Corn Meal Products and the Digestibility of Protein. Rammstedt, *Arch. Hyg.*, 81 (1913), no. 6, pp. 286-306; abs. *Hyg. Rundschau*, 25 (1915), no. 3, p. 108; abs. *Expt. Sta. Rec.*, 33 (1915), p. 564. Analyses are reported, comparing the chemical compositions of corn, wheat, and rye flours. Values are given for the digestibility of the protein content of flours prepared from peas, lentils, beans, corn, wheat, buckwheat, and rye, as determined by artificial digestion.

The Use of Hardened Fats for Food Purposes. H. Thoms and F. Müller, *Arch. Hyg.*, 84 (1915), no. 1, pp. 54-77; abs. *Expt. Sta. Rec.*, 33 (1915), p. 362. Experiments are reported and discussed. It is recommended that a fat should not be hardened to give a melting point of over 37° C. (body temperature). It was found that in practically every case, if the digestibility of fats melting higher than this was not noticeably different from that of lower melting fats, a tallowy taste and intestinal and other passing disturbances, such as are usually noticed with beef and mutton tallow, were experienced.

Are the Hardened Fats Suitable Food for Man? P. O. Süßmann, *Arch. Hyg.*, 84 (1915), no. 2-3, pp. 121-145; abs. *Expt. Sta. Rec.*, 33 (1915), p. 564. Samples of hardened sesame, peanut, and cotton-seed oils were found to contain 1.0 to 1.1 mg., 1.6 to 6.3 mg., and 0.07 to 0.4 mg. of nickel per kilogram of fat, respectively. Larger amounts of iron were detected but these were regarded as having no hygienic significance.

The author concludes that the amount of nickel present in the hardened fat is too small to produce any ill effects.

PHYSIOLOGY AND NUTRITION

Proteins in Growth. Ruth Wheeler, *Sci. Mo.*, 2 (1916), no. 3, pp. 279-282.

The Chemical Nature and Physiological Significance of So-called Vitamines. Carl Voegtlin, *Sci. Mo.*, 2 (1916), no. 3, pp. 289-293.

The Mineral Nutrients in Practical Human Dietetics. E. B. Forbes, *Sci. Mo.*, 2 (1916), no. 3, pp. 282-289.

Food Selection for Rational and Economical Living. C. F. Langworthy, *Sci. Mo.*, 2 (1916), no. 3, pp. 294-306.

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Some Studies on Sugar in Infant Feeding. L. Porter and C. H. Dunn, *Amer. Jour. Diseases Children*, 10 (1915), no. 2, pp. 77-86.

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The Nutritive Value of Wood. G. Haberlandt, *Sitz. K. Preuss. Akad. Wiss.* (1915), pp. 243-257; abs. in *Expt. Sta. Rec.*, 34 (1916), p. 561.

The Preparation of Protein-free Milk. H. H. Mitchell and R. A. Nelson, *Jour. Biol. Chem.*, 23 (1915), no. 2, pp. 459-467. A method is described for the preparation of protein-free milk for experimental purposes.

The Influence of Certain Vegetable Fats on Growth. E. V. McCollum and Marguerite Davis, *Jour. Biol. Chem.*, 21 (1915), no. 1, pp. 179-182.

The Relation of the Quality of Proteins to Milk Production. E. B. Hart and G. C. Humphrey, *Jour. Biol. Chem.*, 21 (1915), no. 2, pp. 239-254.

Basal Metabolism and Body Surface. J. H. Means, *Jour. Biol. Chem.*, 21 (1915), no. 2, pp. 263-268.

On Starvation and Obesity, with Special Reference to Acidosis. O. Folin and W. Denis, *Jour. Biol. Chem.*, 21 (1915), no. 1, pp. 183-194.

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Dropsy and Anemia on Exclusive Potato Diet. O. Strauss, *Med. Klinik.*, 11 (1915), no. 31, pp. 854-856; abs. in *Jour. Amer. Med. Assoc.*, 65 (1915), no. 12, p. 1063.

Different Kinds of Sugar in the Diet of Children. A. Gismondi, *Pediatrics* [Naples], 22 (1914), no. 4, pp. 241-254; abs. in *Expt. Sta. Record.*, 34 (1916), no. 2, p. 164.

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The Viability of the Typhoid Bacillus in Sour Cream. C. Krumwiede and W. C. Noble, *Amer. Jour. Pub. Health*, 4 (1914), no. 11, pp. 1006-1008.

A Study of Fruit Jar Caps. G. M. Stapp, *Mo. Bul. Ind. Bd. Health*, 17 (1914), no. 9, pp. 100, 101.

The Bacteriology of Paper Dishes. Mary Dudderidge, *Housewives League Mag.*, 5 (1915), no. 1, pp. 12-15, figs. 3. A study of wood, wood pulp, and water-proof paper food containers, with special attention to their bacterial and mold content.

The Commerical Food Container. Mary Dudderidge, *Housewives League Mag.*, 4 (1914), no. 4, pp. 11-14, figs. 8.

NEWS FROM THE FIELD

The Home Economics Practice Cottage at the University of Washington. A small cottage which has been on the campus since the Exposition in 1909 has come into possession of the Home Economics Department. It became available October 15, when it was given over to the home decoration class under Miss Denny as a problem in house furnishing.

The only resource in sight at that time was a fund of \$50 from the treasury of the Home Economics Club of the University.

The home decoration class worked out a color scheme. Textile students dyed unbleached muslin to screen the alcove. These hangings furnished the dominant note in the color scheme. The windows were curtained with ten cent cheese cloth with a bit of hair-pin lace set in at the hem. A rug was rescued on its way from the President's office to a lowlier position. Friends loaned unwanted chairs and beds. Students made braided rag rugs and dyed and wove others. They also wove some pillow covers. The most successful one, however, is a dyed sugar sack with a touch of coarse needlework. Slip covers of cretonne were made for the over-elaborate chair and tailored pillows for the uncomfortable chairs.

The home decoration class has been remarkably successful in preserving the color scheme and in keeping the result a simple, inviting interior.

There has been a surprising response to the appeal made by this attempt to make "bricks without straw."

The Pacific Conference of Home Economics concluded its year's work at a meeting held at the Gardena Agricultural High School, Los Angeles, May 18.

At this meeting Mrs. Frank A. Gibson of the State Immigration Commission and Mrs. Amanda Matthews Chase, author and

a home teacher, were guests and spoke on their respective lines of work. Mrs. Gibson is familiarly known as the Mother of the Home Teachers' Bill, since it was through her influence that the bill was passed at the last session of the legislature.

The September meeting was the occasion of a tea in honor of our guests, Miss Martha Van Renssalaer and Miss Flora Rose of Cornell.

The November meeting was held in connection with the Southern California Teachers' Association in San Diego. At this meeting, Dr. Jessica Peizotto, Associate Professor of Social Science of the University of California gave an able address on The Needs of the Home Teacher, followed by a discussion of the subject led by Miss Helen Stafford of Los Angeles.

In February the conference arranged a series of lectures on Foods and Cookery given by Miss Anna Barrowa. These were largely attended.

In April Miss Estelle Lawton Lindsey, City Councilwoman of Los Angeles spoke on Woman's Work in City Government.

Besides the regular meetings of the Conference, the Domestic Art and the Domestic Science Sections have held monthly meetings taking up topics of special interest to each.

The Housekeepers' Alliance of Washington, D. C. At the annual meeting held May 31 about \$50 was distributed to the winners of prizes in the breadmaking contest, carried out under the supervision of the Director of Domestic Science in the public schools, who is a member of the Alliance. The contest was open to all students of the grammar schools, and the prizes were five dollars savings accounts in banks situated near the homes of the winners. The contest is said to have been carried on with extraordinary interest and most satisfactory results.

An exhibit along the lines of household economy is planned for the next year. The following is the announcement on the card which is being distributed to housewives, in connection with the general education campaign toward economy and the right attitude concerning it.

WAR ON WASTE

The Housekeepers' Alliance asks homemakers and houseworkers to cut out the waste in the home.

Don't waste food, it will feed the hungry.

Don't waste fuel, it furnishes power to keep men at work.

Economy in the home is the defense of the nation.

The Alliance invites each homemaker to reward successful economies in her own kitchen, and to enter the results in competition for a prize to be offered for the best showing in economy during the next six months.

Make reports to Prize Competition Secretary, Mrs. Orville Peters, 1900 S Street N. W., Washington.

The South Carolina Home Economics Association held its third annual meeting in Columbia, S. C., Friday, March 17th, in connection with the state teachers' association, of which it is a part. Miss Martin, the president, presided over an unusually large meeting, that left the officers encouraged over the rapid growth of the work and the interest taken in it. Mrs. Henrietta Calvin spoke on Home Economics Work and the Status of the Teacher. Other talks were: How Can I Make a Beginning in My Community in Home Economics, Miss Bessie Rogers; The Influence of Home Demonstration Work in Making the Home Economical and Efficient, Miss Mary Lemmon; The Home Beautiful, Miss Mary Frayser; Division of Time, Miss Catherine Mulligan; Preparedness, The Teacher, Miss Mary McGowan.

Two Questionnaires. That every record of what has been done under given conditions is an important help in the science of management and efficiency; that beginners in

homemaking are asking their elders for guidance in the business relations and economics of an individual income and outgo; that the housewife wants to learn what others have found possible; and that instruction in these subjects may be made more accurate and valuable are reasons given for justifying the request for information in the questionnaire on how to spend the income, sent out by Miss Elliott, instructor in Household Management at Simmons College.

The questionnaire was prepared for former students but answers by others will be warmly welcomed.

Every item asked for involves information which bears on the economic problems of some home.

A second questionnaire of much interest is that issued by the Women's Educational and Industrial Union in its study of the Food of Working Women of Boston, undertaken with the purpose of finding out how these girls can be supplied with good nourishing food at a minimum cost. Believing that hundreds of girls have worked out ingenious answers to this question and that mutual aid is the most important factor in the solution of every social problem the Union co-operating with several other organizations is undertaking to put the results of experience in available form.

The forty-third annual National Conference of Charities and Correction at Indianapolis May 10, 1916, made its greatest contribution in the field of education through a series of six meetings arranged by the committee on Children under the chairmanship of Miss Julia C. Lathrop of the Federal Children's Bureau. These were given over entirely to a consideration of the social service value and demands upon the public school. At one session the liveliest sort of give-and-take argument on the Gary scheme was indulged in. The public school teachers of Indianapolis made special arrangements to take advantage of the Conference. In addition, on one day a meeting of college and university teachers was arranged to consider the use of data of social work in teaching sociology.

The conference at Indianapolis lasted eight days and broke all previous records for size of gathering of men and women engaged professionally in social work. The main divisions of discussions were upon children, corrections, the family and the community, feeble-mindedness and insanity, health, inebriety, promotion of social programs, public and private charities, and unemployment. The next session will be held at Pittsburgh during the spring of 1917 under the presidency of Frederic Almy, Secretary of the Buffalo Charity Organization Society. Mr. Almy has already announced as the subject for his presidential address, *The End of Poverty*.

The Johns Hopkins University. As an outcome of the recent Educational Survey in Maryland, the summer session of the Johns Hopkins University offers, under the approval of the State Superintendent of Education, courses of instruction which will enable persons to make preparation toward the various teachers' certificates specified in the new law which went into effect June 1.

Among these certificates is one for high school teacher of domestic science and art.

The courses which can be taken to meet the state requirements and also be credited toward the Bachelor of Science degree include domestic science and art.

A Self-Supporting Food Department. One of the best plans for the sale of food cooked in Home Economics classes is that carried out in the State Normal School at Valley City, N. D. The food courses are self-supporting and recipes are prepared in quantity for family use (that is, to serve an average of from four to eight). The list of recipes to be prepared during the day is posted on the bulletin board in the main hall; a small show case is provided at the entrance of the cooking laboratory and as soon as a recipe is completed the dishes are arranged for sale. There is a constant demand for these products from teachers, students who are doing light housekeeping, and housekeepers in the town. The work of the classes is hampered in no way, because the

needs of the students determine the article prepared, and those who wish to purchase must adjust the satisfaction of their demands to the supply. A housekeeper may call up to find out what is on hand or even adjust her day for inviting guests to a time when the particular article she wishes will be available.

The students figure the cost of the recipes and become acquainted with the market value of the food materials before and after preparation. They are permitted small servings of all the dishes so that they may know the flavor of all of them. The added interest that the preparation of a salable product creates is apparent in the spirit with which the students work. The Home Economics department becomes also a recognized factor in the community through its relation to the housewife and has an opportunity to keep in touch, in a small measure, with the needs of the home.

The State Interdenominational School of Missions will hold a ten days' meeting with the College of Industrial Arts, at Denton, Texas, during its summer session. The school will have probably 200 women in attendance, who in addition to the regular courses of study will take Home Economics work especially planned for them by the faculty of the college.

There are also planned for this session non-credit courses for mature women that are practical and that render real service to the many women of the state.

The summer session of this state college for women of Texas has been lengthened this year to eight weeks and will include two schools, a Summer Normal Institute and the regular Summer School of the college.

The Summer Normal Institute is intended primarily for teachers in the state who are working for the various grades of teachers' certificates and who by attending the College of Industrial Arts may avail themselves of one or more Home Economics subjects.

The Summer School may be called the fourth term of the college year with students who wish credits on their regular three or four year courses.

The college has recently been granted rating as a college of the first rank and the number of students remaining in Texas to take their degree in this college is expected to greatly increase each year.

New courses this year include work in library methods, expression, public school music, and a course in physical training and playground supervision. A special course will be given for canning club and home demonstration agents of Texas.

Mr. A. C. Monahan of the United States Bureau of Education, one of a number of lecturers and speakers of national reputation will give a series of nine lectures on problems of rural schools and rural life. H. T. Musselman, Editor of the *Texas School Journal*, Dallas, is among the Texas lecturers.

The faculty, of more than sixty, will be made up of directors and instructors in the various departments and of prominent educators of Texas and other states.

Canada's Work. Those who are interested in the extension education carried on in the United States under the Smith-Lever Act will be glad to see this summary of similar work in Canada, also under Government auspices.

Of the activities encouraged and promoted by funds provided under The Agricultural Instruction Act of the Dominion none is more worthy than the improved means which have been made possible for the development of the boys and girls. Boys' and girls' clubs; school fairs; nature study classes in the public schools; school gardens, all encourage association and sociability as well as a love for outdoor life. All four divisions of the work receive substantial support in every province from the grants derived under the Agricultural Instruction Act. In Prince Edward Island, the sum devoted to these purposes in 1913-14, the first year the Act was in operation, was \$5,529; in the third year, or in 1915-16, it is \$10,050. In Nova Scotia the sum thus employed under the Act in 1913-14 was \$6,700; in 1915-16 it is \$10,000.

In New Brunswick in the first year it was \$1,500; in the third year it is \$10,000. In Quebec the first year it was \$3,000; in the third it is \$8,000. In Ontario it was \$10,000; it is now \$20,000. In Manitoba it was \$2,000; it is this year \$5,200. In Saskatchewan it is \$2,100. In British Columbia \$1,000 was so used in 1913-14, but this year for boys' and girls' competitions, fairs, etc., and instruction in public schools, \$17,000 is to be spent from the grants. It must be understood that while in some of the provinces the money is directly employed for the purposes set forth, in others it is used in other ways and the sum required for school fairs, school gardens, and so on, is received from provincial and municipal sources. The figures, however, are in themselves abundant indication of the far-reaching benefits conferred by the Act.

Brief Notes. A silver tea given by Mt. Pleasant W. C. T. U. at the Wilson Normal School Tea Room on Wednesday, March 29, was addressed by Mrs. Charlotte White Lee on Practical and Esthetic Dress, illustrated by models. Dr. Lauretta Kress spoke on Dress in Relation to Health, while others followed with short talks on Christian, moral, and honest dress. A recitation in the costume of "grandma's day" was given.

At a meeting of the Dietitian's Section of the New England Home Economics Association, March 22, the following subjects were discussed: The High Calorie Diet in Typhoid, and Differences in the Dietetic Treatment of Medical and Surgical Cases of Gastric Ulcer.

Miss Anna McMillan, Teachers College, Columbia University, has been appointed to succeed Miss Katherine Ingersoll, who has resigned, as instructor in charge of Domestic Art at Lewis Institute, Chicago, Ill. The entire Domestic Economy Department is planning improvements in the courses and curricula for the coming year.

General Federation of Women's Clubs, Thirteenth Biennial Convention. Doubtless the earliest impressions of all who attended the Biennial in New York June 1-16 were (1) of the phenomenal size of an organization represented by such an enormous delegation as that assembled, and (2) the extensive nature of the organization, emphasized by the representations not only from most remote sections of the United States, but from Alaska, Honolulu, and other distant places. Visitors from many other nations increased the emphasis upon the wide-spread interest in the movement and its work.

Two purposes in the arrangements were apparent, namely, to present the vision of present-day forms of constructive activities, and to aid club leaders with helpful and definite suggestions for local leadership.

Of special interest at the former business sessions were the reports of the different department chairmen, presenting briefly the work of the departments in the past four years, followed by addresses emphasizing special phases of the department interests.

The afternoon sectional conferences were of great value; conservation, education, literature, civics, music, art, public health, home economics, legislation, civil service reform, industrial and social conditions, all receiving attention with excellent addresses and discussions. Home Economics seemed to be a most important topic, judging from the crowded sessions and the interest shown in the splendid programs which Miss Helen Louise Johnson, the National Chairman, presented.

In the forenoon general conference, President Vincent of the University of Minnesota, speaking upon Homemaking as a fine art, gave a most gratifying tribute to the work being done through Home Economics teaching. He pointed out the great significance of the fact that it bases its work not upon tradition handed down from generation to generation, but upon science. It strives to secure a business recognition for home activities, so that women so engaged shall not be classed as at present in

the census as not among those engaged in "gainful occupations." In the great interplay of personality in the home intercourse are great economic, esthetic, and spiritual tasks of which the material activities are but the expression. Home Economics involves vastly more than nutrition and decoration; it aims at vastly more. Its ideals are those of sincerity, simplicity and beauty, not of ostentation. It dreams of a time when taste and art and appropriateness rather than fashion will control in life. At a time when great waves of commonness and vulgarity are in danger of sweeping over us we need to emphasize the duty, the privilege, and the obligation of each family to live its own life and ideals and so to become a missionary to the masses. Home Economics teaches the finest of the arts, and homemaking exemplifies it when it lends itself to creating souls, lives which may live beautifully.

During the Conferences Dr. Carl Alsberg spoke upon Why We Need Uniform Food Laws; Prof. Graham Lusk, upon The Study of Food Values; Mr. Lawrence Veiller upon How Women can Help Solve the Housing Problem; Miss Mabel Kittredge upon Home Economics and Shelter; Dean Arnold upon The Child in the Home; Miss Julia Lathrop upon Education of Mothers as a Problem in Democracy; and Lady Duff-Gordon upon Clothes and the Woman.

Miss Fales of Teachers College presented an interesting pageant of living models showing the clothes of the past twenty-five years, followed by several furnished by B. A. Altman Company of conservative lines, suitable for more than a season's fancy. In a conference on Different Phases of The Dress Question the subject was discussed by consumers and producers, by those who wear, make, and sell styles. The dominant note of the discussion was the need of a saner control of dress so that the caprices of fashion shall dictate less frequent change, with a more thoughtful and intelligent selection of clothing which in simplicity and in better adaptation of line and color to the individual shall give more artistically beautiful clothing at a reduced expenditure.

HOME ECONOMICS MEETINGS OF THE N. E. A.

At the Annual Meeting of the N. E. A. to be held in New York the week of July 3, two Home Economics section meetings are announced for July 4 and July 5, respectively. The meeting on Tuesday, July 4, to be held at the Washington Irving High School, Irving Place and 16th Street; that of Wednesday, July 5, at Teachers College.

PROGRAM

TUESDAY, JULY 4

Washington Irving High School—5th Floor Lunchroom

President of Home Economics Association, Chairman

10.00 a.m. Continuation classes in household arts

Cleo Murtland, Secretary of Women's Work in the National Society for the Promotion of Industrial Education

Teaching practical dietetics

C. F. Langworthy, Chief of Office of Home Economics, U. S. Dept. of Agriculture

Teaching fabric values

Nellie Crooks, Director of Household Economics, Milwaukee-Downer College, Milwaukee, Wis.

Teaching dress reform through the schools

Ethel Ronzone, University of Missouri

WEDNESDAY JULY 5

Teachers College, Chapel

2.00 p.m. Sanitation in food shops and markets

Donald B. Armstrong, M.D., Association for Improving the Condition of the Poor, New York City.

Supervision of Home Economics instruction

Mrs. Henrietta W. Calvin, Expert in Home Economics, United States Bureau of Education, Washington, D. C.

With discussion by Emma Jacobs, Director of Domestic Science, Washington, D. C.; Margaret Holt, Acting Director of Cookery, New York City Schools; Mrs. Anna Hedges Talbot, Supervisor Vocational Education for Girls, New York State; Elizabeth Condit, Supervisor of Household Science, Pratt Institute, Brooklyn, N. Y.

Survey of Home Economics teaching in the Cleveland schools.

Alice Boughton, Supervisor of School Luncheons for the League of Home and School Associations, Philadelphia, Pa.

With discussion by Florence Winchell, Ethical Culture School, New York City; Arthur D. Dean, Chief, Division of Vocational Schools, New York State.

The N. E. A. will also have two programs of special interest to teachers of Home Economics, one on Monday, July 3 at 9.30 a.m. and one on Wednesday, July 5, at 9.30 a.m., both at Concert Hall, Madison Square Garden.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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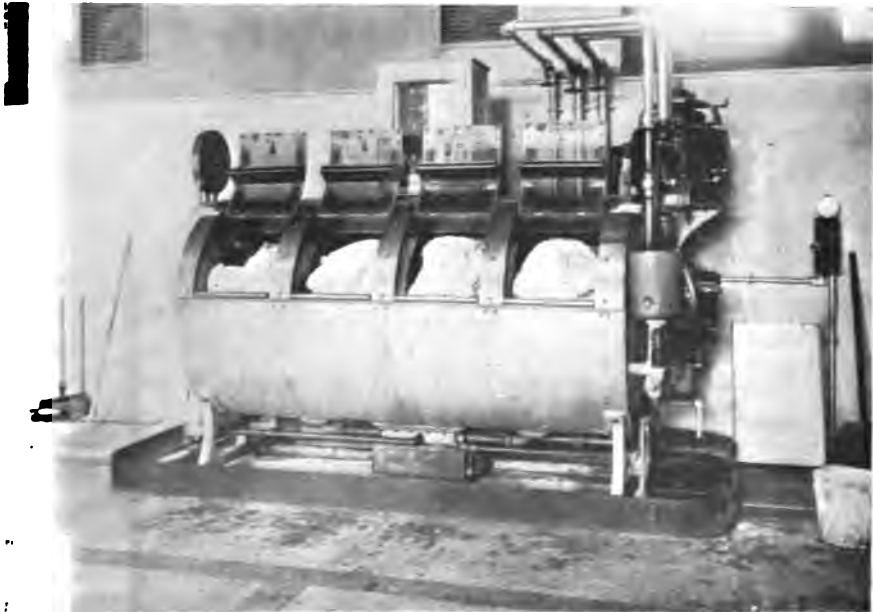
AMERICAN HOME ECONOMICS ASSOCIATION

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Entered as second class matter at the Baltimore Post Office



Interior of Laundry Showing Washing Machine on Left, Four Hydro-Extractors, Laundry Truck, and Racks



Washing Machine Showing Four of the Eight Compartments in Which Each Family's Clothes are Washed

THE MILBANK WET-WASH LAUNDRY, NEW YORK CITY. (See page 422.)

THE Journal of Home Economics

VOL. VIII

AUGUST, 1916

No. 8

THE VALUE OF THE WOMAN OF LEISURE

LENORE HANNA COX

"First catch your hare!" is a counsel of experience. Where is the woman of leisure? One can imagine the impatient question from the busy mother, the spinster full of affairs, the tired business woman. Perhaps she admittedly exists only in that semi-mythical limbo of the spectacular "smart set," advertised out of all proportion to its numerical importance, where life seems to consist of religiously neglected duties, and hectic and costly pleasures. Certainly in no other sphere in our energetic land will a woman admit that she has leisure. "I should just love to"—study, exercise, read, or even play, one hears so often—"if only I had *time*!"

What are our women doing with their time? There are still twenty-four hours in a day, three hundred and sixty-five days in the year—and most women (the estimate is carefully made) are at liberty to choose what they will do with some of that time. The woman who is the bread-winner for a dependent family cannot be said to have leisure. This applies, of course, only to the bread-winner who supports her family by unskilled labor, and is unable to buy the necessary services which ordinarily would be her duties. The unskilled woman wage earner is seldom a wage earner solely. She is mother, wife, or daughter, and gives to her dependents in the time that remains from her work the services demanded by her position. All other women—from the girl who supports herself by the labor of her hands, from the wife whose husband provides the means of subsistence for the family, however meagre, at one end of the scale, through all grades of affluence to the

luxuriously circumstanced wife or daughter of wealthy banker or merchant at the other—all have leisure, that is, time to spend as they *choose*.

The leisure of the working girl is of course limited, and her youth demands that some of it be spent in physical exercise and pleasure. She must have young company, dance, be gay. Nevertheless, it is hers to choose whether all her evenings and holidays shall be so spent or not. That she is often, perhaps usually, incapable of choosing any other form of amusement or interest for her leisure hours is not her fault alone. The larger share of blame must rest upon our still imperfect social organization; but the opportunity exists when she is capable of embracing it. The mother of a large and growing family is also a person of little leisure; but large families seem to be growing beautifully less, and—"if this be treason make the most of it!"—too much time may be spent on a family's physical needs.

These physical needs of the family engrossed the time and the most of the attention of our grandmothers. When the corn and wheat were raised, ground, and baked on the home premises; the animals killed and the meat cured; flax, cotton, and wool, if not grown, were yet spun and woven at home and there fashioned into garments; when the cobbler became a member of the household while he fitted out the family with shoes; when not only cider, but ale and beer, wine and spirits, were brewed and distilled at home for family use; then the "lady"—the "loaf-giver" as our Anglo-Saxon forbears called her—must have found her time much occupied. Whether she did these things with her own hands and the help of her children, or, as we read of Madam Washington, superintended the household affairs as she sat, like Penelope, among her maids, it was an arduous and important work, and left but little unoccupied time. What about the house-mother of today? She may, and probably does buy most of the necessities of life in the shops, finished ready for use. She does this not only because it would be difficult for her to obtain and manufacture the raw materials, if she knew how, but because the finished product is cheaper, produced as it is by machinery and in large quantities.

Men, who have a genius for coöperation and coördination, perhaps produced, certainly stimulated, by their need of team work in time of war, have gradually taken women's work into their own hands. They first laid aside the sword for the pruning-hook, and women (to whose early agricultural efforts we owe the development of the cultivated cereals and fruits from the wild ones) were driven—shall we say promoted?—

from the fields to the house. Then came the machines for spinning; the looms worked by power instead of by hand; and the age of production had arrived, putting hitherto unthought of luxuries into the lives of the poor and the moderately well-to-do. Before the age of machinery the labor of a skilled artisan could buy for him only coarse bread and vegetables, with an occasional dish of meat for food; and Lindsey-woolsey and jeans for clothing, with perhaps alpaca and broadcloth, seldom renewed, for "Sunday best." Machines and the organization of industry, leading to an enormous increase in the material goods of life, are a purely masculine contribution to our social state. Women did their domestic work in individualistic seclusion; men do it by gregarious coöperation.

In all the years during which woman had been shielded from physical harm by the warlike male she had learned dependence, so now, without a murmur she let her work be taken away, keeping without question one function only—which Nature has made it impossible for man to usurp—that of bearing and rearing the young. That one function is perhaps enough to justify the existence of woman from Nature's point of view, but it is not enough to justify the existence of all women economically. If this be, indeed, woman's only reason for being, spinsters and women past the child-bearing age should be eliminated. They have either already fulfilled or failed to fulfill their allotted function. Useless human beings are cumberers of the earth. It is time for women to show that their natural or political value does not rest solely on their faculty of reproduction! Can this not best be shown by their use of the leisure which the activity of man has thrust upon them?

All women resent, blindly or consciously, their relative uselessness in the scheme of civilization as it exists. The unconscious resentment takes a devil-may-care attitude, as who would say—"Very well, if you're bossing the job, do it! You'll get no help from me." Such women take every thing a man will or can give them, giving as little as possible in return. The woman who appreciates the position of her sex resentfully often tries to ignore it by assuming the masculine attitude and point of view. She is likely to enter a profession and compete with man in his accustomed field, and is but too prone to assume that every woman may do the same, and that the sex-position is self inflicted. She works both good and ill to woman's general advancement. Such women do show indeed that their sole value does not lie in the faculty of reproduction. They also seem to prove, sometimes, that activity along

other lines atrophies this faculty. What woman needs to make plain is that she combines with her maternal function other instincts which civilization cannot afford to ignore.

There are few women, however they may resent their uselessness in the present scheme of civilization, who wish to return to the days of hand-loom and self-contained households. Much is said about the hardships of the woman factory worker of today, but her lot is physically easier than that of the mistress of the modest household seventy-five years ago. Let us have all the machinery possible! Mechanical labor done by human beings has nothing noble or ennobling in itself. It is purely the attitude of mind in regard to manual labor that ennoble it; and it was in this attitude of mind, this sense of the importance of her labor that the woman of seventy-five years ago scored—in spite of meagre comforts and excessive toil.

How does the housewife of today spend the time her grandmother devoted to the manufacture of food and clothing? Of course she cooks and cleans, and washes dishes and clothes. She has allowed these minor elements of housekeeping to become overemphasized. Not that the food of the household is unimportant; bodily and mental health and energy depend upon the quantity and quality supplied. But the manner of preparing, the manner of serving, the catering to whimsical taste and appetite, all these are thieves of time; and we are far indeed from the simplicity, usually combined with great dignity, of our foremothers. In the matter of clothing the offence is greater. Materials are ephemeral, yet they outlast the "styles"—a word formerly to be applied only to the garments of the rich. It is difficult, it is impossible to draw a hard and fast line defining the boundary between the useful and the superfluous. Regarding clothes: so many excellent motives are adduced! The desire, first of all, that the child shall have what the parent has missed, in which respect the father is frequently as eagerly concerned as the mother; the love of beauty, crude it may be, that is gratified by making "pretty things" for home and children; the natural instinct of generosity in love that pours out on the beloved object a wealth of time and toil however useless. Who shall set a limit to this instinct? And yet, like the instinct of possession in love, it may work incalculable damage. The self-sacrificing, unselfish mother is apt to rear selfish, exacting children, and the balance may or may not be righted in the next generation.

The value of woman's leisure is apparent when she realizes that she

is a member of a larger family than her immediate circle. There are few communities in our country today so unfortunate as not to have at least a few women who give their time and energy chiefly to public affairs. Generally these are women mature in years and judgment, who have reared their families and established the routine of their households. They are women of all classes, of all grades of fortune. They work, together with the public-spirited men, on the boards of hospitals, of refuges, of *crèches*, of charities of all sorts. They found voluntary civic associations to point out to the community its own needs, and to urge the public servants to do their duty. They interest themselves in politics (although in most states not recognized as citizens), particularly in the relation of politics to the public health and the public schools. And sometimes they arise in their wrath at the general incompetence and dishonesty of public servants, and demand that there be a change; and by a tremendous exertion of "indirect influence" get, perhaps, a slight response! They arrange Chautauquas and lecture courses, art exhibits and music festivals, for the benefit and pleasure of their townspeople, and induce the beneficiaries to subscribe and attend. In many of the recognized charitable associations officered by men, these women, because they can control their *time*, do the routine work that alone makes success possible. They form the bulk of the "woman's club"—that innocent weapon with which women pried open the door of opportunity—where discussions have progressed from Greek poetry to modern prisons, from antique art to better babies.

Such women are of inestimable and generally unestimated value to a community. In our still fluid American society they do the work of the leisured classes of those older peoples where "*noblesse oblige*" has a meaning. It is impossible to praise too highly the noble, disinterested work of such women. But every woman has a duty as a citizen of the community in which she lives, of the state, of the nation. When she realizes that she must sacrifice her desire to do the utmost for her family in order to bear her share of the work of the larger world, by the measure of the difference in these circles has she become of greater value. She must refuse to multiply the superfluities of life, in order to use some of her leisure for thought and action on public affairs. It may be a matter of extreme importance to her (as one woman put it), "how my child's dress hangs," or whether every pair of little drawers is lace trimmed, but undue attention to such detail takes time stolen from the study of life and affairs. The burning questions of tablecloths *versus* doilies, bouil-

lon cups ~~versus~~ soup-plates, serving-tray or no tray, furnishing the proper implement with each sort of food, the arrangement of creature comforts of bed and bath—all these cost time, and thought, and money.

Among the most immoral influences of the time should be reckoned those magazines, advertised as especially adapted to the "woman in the home;" which make enhancement of physical comfort the sole business of the married woman, a sentimental love-match the sole goal of the young. From being the hardy pioneers of the world who subdued a continent in unprecedented time, we are becoming a nation of Sybarites; we can endure no hardship; machinery and foreign peasants do the rough labor; the native-born of a couple of generations of Americans is willing only to "boss the job."

Our women have much to do with the present tendencies. Never, probably, has a great state existed in which woman's influence was so potent. There is good reason for this. Our women worked side by side with their men while this great continent was being changed from a wilderness to a cultivated state. The influence of this equal economic status, of this quiet, unassertive partnership has never been entirely lost with men of native American stock; the legend of women's value still persists. But she has to reckon, in urging her recognition in social and political relations, with men sprung from those older nations where women are still chiefly domestic animals or the playmates of leisure hours. To prove her value to the nation, despite her economic unproductiveness, it is the duty of each woman to use her leisure, not in mere time-devouring pleasures, however innocent, not even to enhance unduly the physical well-being of her family, but to stimulate and increase their mental grasp, and her own.

She may let the "Daily" supplant the "doily" with its attendant crotchet hook. Much is said and written about the worthlessness of our newspapers, but after all they do contain the news, and in order to choose the news that is worth while, only intelligence on the part of the reader is necessary. A half hour daily on a reputable newspaper, with a desire for knowledge, will work wonders in a mental outlook. The sensational novel and the easy-to-read magazine should give way to a thoughtful book. This sounds dry-as-dust, but the book need not be. There are books that are accurate, well-written, dealing with great questions, which are at the same time thrillingly interesting. Some such strong meat should be a part, at least, of women's mental food. Can she not exchange the moving picture show, occasionally, for the drama of history

seen with the mental eye alone? Only by the example of the past may one estimate the historical drama of today now being "enacted and contrived" before our eyes. Not long ago a distinguished Italian historian—a thoroughly competent judge—made a comparison of the present state of our Republic with that of Republican Rome at the period of its decline. It seemed not altogether fanciful, but the value of the comparison was fully evident only to one who was a student both of history and of current events.

These are stirring times. The war probably marks a great change, a turning point in the history of mankind; for, wherever one's sympathies may be, all are practically agreed that the ultimate struggle is between Feudalism and Democracy. The war is giving to the women of the warring countries their greatest chance; men's work is being thrust upon them and they are nobly taking up the burden. Every change in woman's condition has been thrust upon her from outside, but no change has found her unequal to the task. Woman is the static sex, as must be, since she bears within herself the future race, but when change does come, she shows a marvelous power of adaptability. So now she is everywhere doing "her bit" in an entirely new world. The American woman has had a world-wide reputation for activity and initiative. Is she to be the only woman of the world to sit at ease and let the wave on which her sisters are riding to economic independence pass her by? She cannot now play the part of the women of France, of Belgium, of Germany, and England, but she can prove by her work, by her conversation, by her earnest endeavor, most of all she can show by her *voluntary* activities, that she could play the part if fate should cast her for it. Frivolities, Romance, and Tatting may suit "the piping times of peace;" they are not fit pastimes when a political creed hangs in the balance.

FLORIDA'S FIRST HOME DEMONSTRATION CENTER

SARAH WARING PARTRIDGE

Agent of Home Demonstration Work, Hillsborough County, Florida

The thought that gave birth to Florida's First Home Demonstration Center had its origin in the brain of Marshall Moore, Superintendent of Public Instruction for Hillsborough County, Florida.

When Mr. Moore entered upon the duties of this office, January 1, 1913, he brought with him a keen sense of the educational needs of the people of the county and some big ideas of how these needs might be met.

Among them was a plan out of which grew our present work. This plan was to place centers within access of outlying country districts where the neighborhood folk could gather for training along all lines of work pertaining to home life; for the study of home and farm problems; for social intercourse; in fact, for whatever might prove for the uplift of the home and community. Mr. Moore proposed doing this by erecting, within access of neighboring communities, a building of pavilion type, equipped for community meetings. I saw at once that his problem was my problem; and this plan, one of the possible happy solutions of the same. Together we have worked out our Home Demonstration Center, an adaptation of the original idea.

For a locality in which to start this work, we chose a scattered neighborhood, eight miles from the nearest railroad point. The houses, from one to four miles apart, are unpainted, unceiled, frame buildings, devoid of all conveniences, and with no thought of beauty or sanitation. The only suggestion of the outside world in this modern "Sleepy Hollow" is the "chug, chug," of the ubiquitous Ford, which has found its way even here.

As a house in which to work, we took an old abandoned one-room school house, a frame building, which was as unattractive in appearance as the poorest home about it. We were not sorry to find it so, for the first demonstration which we wished to make was of some of the possibilities in such an old shell as this. We ceiled it overhead, painted it inside and out, and screened windows and doors. The room, 36 x 18 feet, we divided into two by the use of portieres. We removed the pitcher pump which stood about twenty feet in front of the building, and put in its stead a small force pump. We laid pipe under ground to the rear of the building. With elbow connection, the pipe rises to the top of a

covered barrel placed on a stand eight feet high, entering the barrel just below the first hoop. A cut off was inserted in the pipe near the pump, making it possible to pump the water through the mouth of the pump, or, by reversing the cut off, to throw it through the pipe into the barrel at the rear of the building. A short joint of pipe running from the bottom of the barrel through the back of the building carried the water into the rear of the building, which we use as a kitchen. A three inch pipe, in the top of which is fitted a large funnel with strainer, passes down through the floor, and with an elbow is buried beneath the soil. The end of this pipe is stuffed with Spanish Moss to prevent the soil from packing into it, and a box is turned over the pipe for the same purpose. The whole is underground. Through this funnel all water from the building is poured and seeps into the sandy soil. This does away with the usual puddle of dish water, or the "slop barrel" found beneath so many kitchen windows.

The room at the front of the building is 10 x 18 feet, and is furnished very simply but tastefully as a dining room and living room. A green matting art square covers the floor, and, with the green burlap portieres and the dainty ecru curtains of scrim and net that hang at the four cottage windows, forms a pleasing contrast with the delicately tinted grey walls of the room. An extension table of weathered oak, six oak chairs, a settee, and a homemade oak utility box for the linen, complete its furnishings.

The portieres, curtains, and the hemstitched and monogrammed table linen, made under our direction by the Canning Club Girls of this neighborhood, are beautifully done. The younger girls hemmed the cup towels. Each little crooked stitch is a mute tribute to their interest in the center and the eagerness with which they look forward to their tenth birthday, the age at which they may become Club girls. The interest of outsiders has been manifested by substantial gifts. The pretty set of china which we use in the dining room was given by the *Plant City Courier*, a paper published in Plant City, Florida, and the flat silver for the table by Knight and Wall, a hardware firm in Tampa.

The rear of the building, 26 x 18 feet, we have equipped for a kitchen. When planning the furnishings, we economized space so that twenty-four girls may work in this room without crowding. Three tables 10 x 4 feet were made for the room, two of them placed lengthwise, the third across the rear of the building. On each side of these tables are drawers twelve inches deep, each drawer divided by a partition into two equal

parts. The center drawer is used as a supply drawer, while in each division of the other two drawers is an individual equipment of cooking utensils, furnishing supplies and equipment for eight girls at each table. The tables are covered with white oil cloth. Placed in the center of the two tables which run lengthwise in the room, are two hot plates, 1 x 4 feet in size and each having four burners. There is a portable oven with glass door for each hot plate. There is sufficient space between the butting ends of the hot plates to place a pair of scales and a desk garbage jar. With the exception of the hot plates, the third table is similarly equipped. For the use of these girls we have a large range set in line with the table, so that the girls may learn its use and care. Gasoline is the fuel used.

We opened this place for work December 17, 1915, and already it has been the center of many activities, while the interest and loyalty of the community folk have made the work delightful. Twice a month meetings are held for women and girls. Practical lessons in cooking, sewing, household management, home conveniences, and sanitation are given. The social hour is not neglected. We have held community meetings in which the men, women and children have participated. We have had days with the Corn Club boys and Canning Club girls, days in which we worked one-half of the day and spent the rest in sports of various kinds—games, races, and contests. We have brought to these people our workers from other sections, who have met and mingled with them, bringing to them the inspiration of a broader life. But whatever these workers and lessons may have taught, most of all it is the Center that is continually holding out an ideal of what their own homes might be.

The influence of this Center is not confined to this narrow sphere. People from nearby also come here for work, and the women of another community in the county have secured and are equipping a room for their own use; and because of what it is meaning in our work in Hillsborough County, similar centers are being planned for four other points in the state. While this Center does not measure up to Mr. Moore's original plan, we believe that it will eventually lead to its development, and our first Home Demonstration Center in Florida prove the mustard seed of our planting.

A CITY HOUSEKEEPING CENTER

RUTH RANSOM AND JANET WILKINS

In the heart of the Italian district of Chicago, seven years ago, a four room tenement flat, consisting of a living room, dining room, bedroom, and kitchen was furnished at an approximate cost of two hundred dollars, to serve as a model for a family of small means. The amount expended was that found to be ordinarily used by a family paying an equal amount of rent in that neighborhood.

The purpose of the flat is to teach the neighborhood children and working girls how to furnish a home; how to keep that home attractively clean; and how to prepare simple, cheap, and wholesome meals.

At present, the flat is serving a wider purpose in that each morning a mothers' class in cooking or sewing is directed by a trained worker. In the cooking classes the women are taught to prepare nutritious American foodstuffs at a minimum cost. While they are eating the meal they have prepared, at an attractively set table, they compute the cost of each dish and discuss, in simple terms, the nutritive value. In the sewing classes they are taught to make over garments, to make new for themselves and their children, and to use paper patterns. One afternoon a week, the women who have taken their babies to the Clinic of the Infant Welfare Society come to the flat and are taught how to cook the foods which are particularly good for their babies. All the women are visited in their homes and are given practical advice as it is desired. Weekly budgets, sanitary conditions, and other household matters are the chief topics of conversation.

Each afternoon, after school, a class of eight children, ranging in age from ten to sixteen years, meets under the supervision of a second instructor. The children come one afternoon a week for three years. During this time, by preparing simple meals and by doing the entire housekeeping of the flat, they learn the principles of cooking and housekeeping.

Every evening at six o'clock a group of working girls come to the flat directly from work to cook their dinner. Besides learning how to cook they eat their meal at a carefully set table and discuss household equipment and management. Many of the girls are engaged to be married and they take infinite pride in their newly acquired knowledge. Cook books are kept by all the classes and extra recipes are distributed widely throughout the neighborhood.

The Center exerts a wide influence in the neighborhood. About two hundred persons come to classes each week and repeated calls are made upon the flat for assistance in various difficulties, such as cases of sickness, extreme need, unemployment, family quarrels, and delinquent children. In these matters it coöperates with the charitable organizations of the city.

The Center is supported by the Association of Practical Housekeeping Centers. The total expenditure for one term of nine months is about thirteen hundred dollars. This provides for one teacher. For two teachers the expense is doubled.

CLEANING SILVER BY CONTACT WITH ALUMINIUM IN ALKALINE SOLUTION¹

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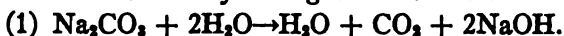
INTRODUCTION

An investigation of the different methods of silver cleaning has been conducted in the Office of Home Economics as a part of an extended study of methods of cleaning metals and other common household equipment. This paper is a preliminary report of the results obtained in cleaning silver by the electrolytic method. Unlike most other metals, silver and gold are not tarnished by the oxygen, water vapor, or carbon dioxide present in the air, nor by the action of weak organic acids. Silver, however, readily forms the black silver sulphide on coming in contact with sulphur compounds, small quantities of which are commonly found in the air as the result of burning coal and illuminating gas, while larger amounts occur in vulcanized rubber, wool, and foods like eggs. The problem of cleaning silver involves the removal of the tarnish of silver sulphide by some method which will also restore the polish to the surface of the metal.

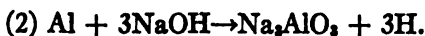
¹ Read before the Fifty-second Meeting of the American Chemical Society held at Urbana-Champaign, Ill., April 18-21, 1916.

A few years ago the so-called electrolytic method for cleaning silver was introduced to the public, and several forms of these cleaners, which are all alike in principle, are now found on the market. In this method the silver is cleaned by bringing it into actual contact with aluminium in a solution of an electrolyte. Briefly the chemistry of the process may be explained as follows:

Aluminium is electrolytically more active than silver, or, chemically speaking, it is said to be electro-positive referred to silver. In the presence of an electrolyte like sodium carbonate or sodium chloride, or a mixture of both, aluminium forms aluminium ions in the solution and itself becomes negatively charged. The silver accordingly becomes positively charged as the current flows from the aluminium to the silver through the solution. In other words, such an arrangement of metals in an electrolyte may be considered to be an electrolytic cell. Since silver sulphide is slightly soluble, a small number of silver and sulphide ions are always present in the solution and the silver ions will give up their positive charges of the electricity and plate out on the silver or negative pole as silver atoms. Any agency making the silver sulphide more soluble will increase the number of silver and sulphide ions and, provided the silver ions are plated out as rapidly as they are formed, this will increase the rate of the reaction. Moreover, in accordance with the law of mass action, the greater the number of aluminium ions formed in the solution, the greater will be the tendency for silver sulphide to be reduced to metallic silver. The conditions are apparently most favorable to the completion of the reaction when a dilute solution of sodium carbonate is used as the electrolyte. The hydrolysis of this salt furnishes a fairly strong alkaline solution.



Aluminium then displaces hydrogen from a boiling solution of the alkali.



The atomic hydrogen supplied by this reaction reduces the silver sulphide.



When an excess of hydrogen ions is continually being formed, the sulphide ions are gradually removed to form molecules of H_2S . In this way the equilibrium between Ag_2S (undissociated) and its ions is disturbed, and accordingly more Ag_2S dissolves. The reaction finally is completed and, since the excess of aluminium ions plates the silver out on the positive pole, practically no silver is lost.

EXPERIMENTAL STUDY OF THE METHOD

The main object of this investigation was to determine the value of the method and the factors necessary for its efficient operation under household conditions. The methods and apparatus accordingly were simple and in most cases applicable to household use. The silver was tarnished by immersing it in a strong potassium sulphide solution, and in order that the tarnish should be uniform for a comparative series of tests, all of the spoons to be used in each series were placed in the sulphide solution for the same length of time. Porcelain or agate-ware dishes were used for containing the solution of electrolyte which was made up by adding different amounts of soda and salt to a quart or two of water. The active metal used, aluminium or zinc, or an alloy of both, and the tarnished silver were then placed in direct contact in the solution, which had previously been heated to the desired temperature, and the time necessary for cleaning was noted by a stop watch. Using these methods of procedure, several different electrolytes of varying concentrations were tested; experiments were conducted at different temperatures; the relative efficiency of aluminium, zinc, and an alloy of these metals was studied; and the merits of the electrolytic method were investigated as compared with the advantages of cleaning silver by polishing with an abrasive material. In addition, several commercial types of electrolytic cleaners were examined in the laboratory.

From the theory of the cleaning process as formulated earlier in the paper it would appear that there is practically no loss in weight of the silver cleaned by the electrolytic method, since the tarnish of silver sulphide is merely reduced to metallic silver. In order to verify this three sterling silver and three silver plated spoons were weighed, tarnished and cleaned fifty times, and weighed after the final cleaning, zinc being used as the active metal in a solution of one teaspoonful of sodium carbonate to one quart of water at the boiling temperature. During the fifty cleanings the three sterling silver spoons lost 0.0043, 0.0034, and 0.0034 grams and the three plated spoons lost 0.0026, 0.0019, and 0.0024 grams, or an average of 0.00006 grams in each cleaning. This loss is insignificant when compared with the loss in polishing with an abrasive silver polish which actually cuts away the tarnish, as was shown by the following test. One sterling silver and one silver plated spoon were weighed, tarnished and cleaned six times by rubbing with a paste of finely powdered whiting and water, and weighed after the last cleaning. These spoons lost 0.0094 and 0.0087 grams, respectively,

or an average of 0.0015 grams in each cleaning, about twenty-five times as much as by the electrolytic method.

While the electrolytic method removes the tarnish effectively and with practically no loss of metal, it gives the articles cleaned a satin finish rather than the bright burnished appearance obtained when abrasive polishes are used. After the spoons used in these experiments had been cleaned a number of times by the electrolytic method it was found necessary to rub them with a paste of whiting and water to restore their original bright polish. In practice, therefore, it may be found desirable to use the electrolytic method as frequently as is necessary to remove the tarnish, and to rub the silver with some good abrasive polish only as often as may be desirable to restore the burnished appearance.

A combination of the two methods is sometimes used by adding one or two teaspoonfuls of finely powdered whiting to each quart of the cleaning solution, and after removal the silver is allowed to dry without being rinsed. The film of whiting which adheres to it is then rubbed off with a soft cloth. This has the advantage of convenience but the polish obtained is not so bright as when the two methods are used separately.

CONCLUSIONS

The results of the experiments indicate that washing soda (sodium carbonate) is slightly more efficient than baking soda (sodium bicarbonate), and that one teaspoonful of each washing soda and common table salt to a quart of water is the most economical concentration of the electrolyte. The most satisfactory results were obtained when the cleaning solution was kept at the boiling temperature, less than a minute usually sufficing to clean the silver. Strips of both aluminium and zinc proved efficient for use as the active metal of the method, but the zinc corroded more quickly than the aluminium owing probably to the formation of a protective film of basic zinc carbonate, which had to be removed by hydrochloric acid. The electrolytic method of silver cleaning has been found in general to be satisfactory for household use. Its principal advantage is that it saves labor. In addition, it is convenient and clean, and removes the tarnish from both sterling and plated silverware without appreciable loss of the metal.

THE MUNICIPAL LAUNDRY PROBLEM¹

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"Public health is purchasable;" so, indeed, is public cleanliness. As a matter of fact, it is obvious that, when we begin to spend money for public health, we can have no certainty of obtaining it unless we have entered the market for cleanliness. In general, cleanliness is a prerequisite for health. If the state or the community recognizes a responsibility in the form of maintaining health, it is quite logical, then, for it to recognize the obligation which lies upon it to make provision for public decency.

Many communities provide the means for the cleansing of human bodies. It is just as essential to health and decency that public facilities, where private ones are lacking, should be provided for the cleansing of the garments, the condition of which must, otherwise, lower the tone of decency of the people in the community. I emphasize decency, for it is essential that health workers should realize more and more that it is impossible to justify most of our expenditures if we consider these expenditures to be inductive to health alone. It is very difficult definitely to ascribe ill-health to dirty streets, unsightly backyards, and such undesirable elements in our physical environment for the elimination of which we spend thousands yearly, not in reality to maintain public health, but, as a matter of fact, to establish public decency.

Among the great mass of the poorly housed tenement population of the large American cities, the facilities for washing and drying clothes are decidedly meagre, although cleanliness as regards our wearing apparel is always essential to decency and is frequently a factor in health. Recently the Bureau of Public Health and Hygiene of the Department of Social Welfare of the Association for Improving the Condition of the Poor concluded an investigation in New York City aimed at discovering the necessity for public laundries or wash houses there and the cost of their equipment and operation. The Bureau made a statistical analysis from the files of the Tenement House Department, supplemented by a house to house canvass, of the laundry facilities in the homes of the

¹ Presented at the Annual Meeting of the Institution Economics Section of the American Home Economics Association, Lake Placid, N. Y., 1915.

badly housed. The Bureau studied conditions on the east and west sides of the city and investigated, from this point of view, the housing conditions of about 205,000 people. Bathing facilities were also investigated and it was found, striking an average for four different sections of the city, that the percentage of families without equipment was as follows: without bath, 92 per cent; without wash tubs in the home, 40 per cent; without hot water, 87 per cent.

A questionnaire was presented to 10,000 bathers at one of the municipal baths, by which an attempt was made, through the aid of illustrations of wash houses in other cities, to obtain an intelligent expression of opinion as to the attitude of this group of typical East Siders towards the establishment of a place where they could come and wash their clothes.

As an illustration of the kind of publicity work done in this connection, cards were handed out to each of the bathers depicting the advantages of a public wash house as follows:

1. Nice, light, cool, ventilated room.
2. Clean wash tubs.
3. Plenty of hot water, soap, soda, starch, and bluing.
4. Electric irons, ironing boards, baskets, scrubbing boards, wringers, tables, pails, and pans.
5. Rapid steam dryer.
6. Cloak room for lunches, packages, and outer clothing.
7. Day Nursery—place to leave the children.
8. Nice clean toilets.
9. Cheap—3 cents an hour.

The women of all classes, economic and civic, were enthusiastically in favor of the proposition, while surprising as it may seem, a large percentage of the men promised to make use of the common tubs if provided. The statistical results of this investigation were as follows:

	<i>Men</i>	<i>Women</i>
Percentage that would use a public wash house.....	28.7	69.1
Percentage that would not use a public wash house.....	66.9	10.3
Percentage in doubt.....	4.3	20.0

The necessities here indicated have been met in a few American cities by the establishment of public laundries, or public wash houses, fashioned largely after the plan of those long in use in foreign cities.

What is a public wash house? It is a place where those people who have very inadequate home facilities may go and wash their clothes under decent and sanitary conditions for a very small cost and with a minimum of time expenditure. The building, usually a part of a public

bath, is plentifully supplied with steam and hot water, and is equipped with tubs (two or three for each washer), wringers, electric irons, ironing boards, scrubbing boards, and all minor utensils. Those using the establishment are also permitted to dry their clothes in large steam dryers, while at the same time a store is maintained where bluing, starch, and soap are sold at cost. Although it is very infrequently found in this country, there should always be in connection with such an establishment a day nursery where the women can leave their children in safe hands while they do their laundry work.

Such is a public wash house. There are about eighteen such institutions in America, five of which, and the most successful ones, are in Baltimore, Maryland. As long ago as 1904 according to Bulletin No. 54 of the Bureau of Labor, there were in the United States eleven public wash houses. These were situated as follows: Allegheny, Pa., 1; Baltimore, Md., 2; Buffalo, N. Y., 2; Chicago, Ill., 1; Cleveland, Ohio, 1; Philadelphia, Pa., 2; Troy, N. Y., 1; Elmira, N. Y., 1.

The first wash house to be established in this country was in Philadelphia under the auspices of the Public Baths Association of Philadelphia. This was opened on May 21, 1898. Buffalo wash houses were hardly worthy of the name, for they were inadequately equipped and were intended to be used by bathers in the adjoining bath house only for the purpose of washing underclothing. While Philadelphia must be considered the pioneer city in this regard, it is recognized that another city, Baltimore, has made the greatest advances in recent years in the development of public wash houses. As mentioned above, there are, at present, in Baltimore, five such institutions.

Undoubtedly a large part of the success of public wash houses in Baltimore is the result of the fact that the Baltimore authorities have recognized the necessity of taking it to the people in the form of educational work, publicity, and advertising, in the community adjacent to the establishment. Advertising is essential to the success of municipal wash houses or municipal laundries. The subject of laundry publicity would suggest the story told of the opening of a new private bath in Cincinnati. It was their system of initial advertising to send out complimentary tickets not only entitling but encouraging the receiver to take a bath at this institution. Among the recipients of these tickets was Vice-President Marshall. In his case, however, whether with or without malice is not known, he received at frequent intervals a series of these complimentary tickets. It is said that the Vice-President

finally found it necessary to head off the bombardment and took as his means the writing of a letter to the bath proprietors stating in his letter that he considered the first ticket a courtesy, that he was compelled to look upon the second as a suggestion, and that if he received more tickets he would feel obliged to consider it an insult.

Public laundries and wash houses have been in existence for nearly twenty years abroad, and in London in 1911 there were thirty-five such institutions, patronized by nearly a million washers. In the London wash houses there were in 1911, 1729 wash house units. The charge for the use of these is one penny per hour and it is found that the average time per washer in London is two and a half hours. Abroad, they more nearly deserve the name of public laundry than that of public wash house, when the equipment includes electrically driven washing machines and hydro-extractors. Such, indeed, is a real public laundry. It has many advantages both economic, social, and sanitary over the older type of public wash house. While the original cost of equipment of the laundry type is greater, the cost of operation is not especially excessive. Further than this the number of families that can be accommodated weekly or daily in a mechanically operated plant is much greater than the utmost capacity of the non-labor saving wash house equipment. In addition, the public laundry with its mechanical equipment is more sanitary, as the clothes are handled by only a few people and are sterilized before being returned.

There would seem to be no reason why such an activity could not be justified from a municipal point of view, and as a demonstration of what the possibilities were in that field the Bureau of Public Health and Hygiene of the Association for Improving the Condition of the Poor has recently established in the Milbank Memorial Bath on East 38th Street, the first mechanically equipped wet wash laundry in America, to be operated under quasi-public auspices. This laundry is showing a constantly increasing patronage and is, at the present time, operated to its full capacity, serving an average of nearly 500 families a week at a charge of 25 cents for 30 pounds of clothes, or 35 cents when collected and delivered. This agency for cleanliness and decency exists as a demonstration of sanitary methods of laundry operations and as a research laboratory for improvements in commercial laundry practices. It is planned as speedily as possible to place the institution on a self supporting basis so that it may be, perhaps, the initial demonstration of

the possibilities for the municipalization of clean clothes—public necessities in New York City.

Under what circumstances is the public wash house experiment justifiable? Obviously, where laundry facilities are poor in the home. Among tenements, where wash tubs are rare, where dark, damp courts provide the only means for drying, and hot water is frequently an impossibility, the demand is urgent. From this point of view, it is strange that the largest city in America, and indeed the typical tenement city, should be without any public or private provision of this kind in its most congested borough. Philadelphia, Baltimore, Buffalo, Elmira, Brooklyn, and other cities have found an urgent demand for, and an immediate success following the establishment of public wash houses. There can be no doubt of the necessity for these agencies of decency in many other large American cities, particularly on Manhattan Island.

In the belief that public wash houses in New York City would meet a justifiable demand and because it would seem desirable to have both the wash house and the laundry experimented with in New York City, the Association for Improving the Condition of the Poor have urged upon the municipal government the establishment of an experiment in the basement of one of the new public bath buildings on the West Side. Estimates regarding the cost of equipment and operation have been presented to the Borough President's office together with alternative estimates for a mechanical laundry equipment. This matter is now pending before the Board of Estimates and is being urged upon them for the following reasons:

1. Careful investigation has shown that the majority of people in that neighborhood are without home laundry facilities. It is believed in any event that the laundry process is a thing that can best be carried on outside the home, in spite of the fact that Mr. Dowling, the alderman from this West Side district, opposes the wash house because he feels that one of the most attractive sights in this neighborhood is the backyard clothes line. Mr. Dowling has not yet expressed himself as regards the fire escape and dark courtyard clothes line.

2. The success of the wash house has been demonstrated in many other American and foreign cities.

3. The capital investment is insignificant—not more than \$3000—while the operating expenses are simply those of an additional attendant in the bath.

4. The wash house will be of use to: (a) The mothers in the neighborhood with poor home facilities; (b) the young girls living alone; (c) the men who are working in this country attempting to save enough to bring their families over; and (d) the destitute and homeless.

5. The wash house is of both direct and indirect importance in the health of any neighborhood, is justified on the grounds of comfort, and is an educational factor in personal cleanliness and decency.

Even though it is believed that the public laundry will meet a greater demand and serve a more fundamental public service than does the wash house at present, nevertheless, there is no doubt that where wash houses have been established and intelligently operated they have been factors of social and sanitary importance. The wet wash laundry in the Milbank Bath, under the auspices of the Association for Improving the Condition of the Poor, is an experiment being conducted along essentially the same lines as would have to be the case were it under immediate municipal control. Further, the Association has guaranteed to conduct an educational campaign in the neighborhood of the proposed West Side wash house similar to the campaign carried on in connection with the East Side laundry. This is an opportunity to have both tried out under comparable conditions. Incidentally in this connection it may be mentioned that the Hudson Guild, a settlement house on the West Side near where it is proposed to establish the wash house, has agreed to operate a day nursery in connection with the wash house so that children may be cared for under safe auspices while the mothers are at work. It may be added here that the two wash houses in Philadelphia with fourteen laundry units charging five cents an hour had a patronage, in 1911, of 4900 people. The five wash houses in Baltimore, with 35 laundry units charging three cents an hour, boasted a patronage, in 1912, of 22,000 people, about one-fifth of whom were men.

Perhaps the chief theoretical advantage of the laundry over the wash house is the fact that it comes more nearly meeting what may be expected to be the ultimate solution of the laundry problem in an intelligently organized community. While it is true that each house should eventually have a private bath equipment, the same thing cannot be said for laundry equipment, for obviously it would be more social, more economical and more hygienic to have the work done outside the home under centralized, efficient control. A municipal mechanical laundry plan tried out in this country would be a step toward the ultimate solu-

tion of the problem. Such a plant would be an essential part of the general program which would lay a better physical foundation for the social state towards which we are looking.

Whether or not the public wash house, or, indeed, the public laundry is the ultimate solution of the laundry problem, it must be admitted by all that here we have a condition—and a condition which must be met. It may not be possible under present conditions to apply a cure; it may be necessary to palliate the unfortunate circumstances. Obviously, though not in its entire influence, the public wash house is a temporary expedient, a palliative measure, yet there are many thousands who must wash their clothes and cannot wait for housing or municipal reform.

Private and public health and decency demand that some provision be made, even though it is not a final method. It is true that, when we palliate an evil condition, quite frequently we make it a little more tolerable, and consequently perpetuate its existence. This is not the vital side, however, when the apparent palliative measure has another important phase of influence. The ultimate effective demand for good housing, including proper bathing and washing facilities, is going to come from the people who are now poorly housed. Any measure which conserves and strengthens the health and general welfare of these people is bound to be a positive force for good; it is bound to be a constructive influence. Far more important than this, however, is the educational value of the measure. The public wash house, like the public bath, finds its chief justification in the fact that it gives to the people an opportunity to learn how to be clean and makes it possible for them to appreciate the value to health and decency of being physically clean. Physical cleanliness enhances our moral and spiritual tone. The people will recognize more acutely their housing and municipal defects and will demand even more energetically than at present that equipment for clean bodies and clean clothes, whether within or outside the home, which they will have learned to use and value and the importance of which, for the preservation of health and the maintenance of decency, they will have been educated to appreciate.

STANDARDIZATION OF TEMPERATURES FOR COOKING
BATTERS AND DOUGHS

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1. OPTIMUM TEMPERATURES FOR COOKING BISCUIT

This is the first of a series of experiments on the standardization of temperatures for cooking various batters and doughs. The aim of the experiment recorded below is to determine the possible range of temperatures within which biscuit of good grade could be obtained.

In all of the experiments performed the composition of the biscuit was carefully controlled. In each case there was recorded the temperature of baking, the weight of the raw dough, the weight of the biscuit after baking, the percentage loss in the weight, the time required for baking, and in several cases the temperature reached by the interior of the biscuit.

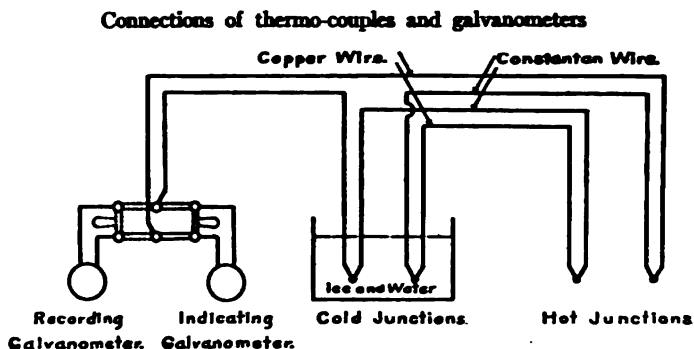
In the first series of experiments the temperatures were recorded by means of a standard Centigrade thermometer. This indicated very exactly the oven temperature but it was somewhat difficult to introduce it into the biscuit in such a way as to avoid error, due to the fact that the thermometer would sometimes pierce the biscuit and take the temperature of the pan. On this account the temperature of the interior of the biscuit had to be checked up by using a differential thermometer according to the plan explained in the bulletin on *The Economics of Electric Cooking* by P. W. Gumaer.¹ The following quotation describes briefly his method.

"The temperature of the ovens was measured by means of copper-constantan thermo-couples with which an accuracy of 0.1 degree is obtainable when used below 360°C. (680° F.). A Siemens-Halske indicating galvanometer and a Bristol recording galvanometer were used to determine the e.m.f. of the thermo-couples. The recording galvanometer traced a curve by intermittent contact on a circular smoked chart. Both the indicating and the recording galvanometer were calibrated for the copper-constantan thermo-couples by means of mercury thermometers which had been certified by the Bureau of Standards. The thermo-couple and the thermometer were immersed in an oil bath which was slowly heated and carefully stirred. Simultaneous readings

¹ P. W. Gumaer. *The Economics of Electric Cooking*, Univ. of Mo. Bull., Vol. 16, No. 27.

were taken of the galvanometer and the thermometer. The figure below shows a diagram of the connections used for the galvanometers and thermo-couples.

"In the oven the wires of the thermo-couple were enclosed in a glass tube and separated by mica. Outside the oven they were enclosed in



rubber tubing. The cold junction was kept at 0°C. (32° F.) by immersion in ice water.

"In oven No. 1 an extra thermo-couple was inserted for measuring the internal temperature of the food. The wires entered the oven through two glass bushings and were left bare except for a 3-inch glass tube at the end which was inserted in the food. The wires were long enough so that after the food was cooked it could be placed on a shelf just outside the oven to cool without removing the thermo-couple from the food. In order that the wires would not short circuit either on themselves or on the lining of the oven all the slack was pulled outside the oven."

The work was done in three ovens, two gas and one electric. One of the gas ranges was of the ordinary type in which the oven was thoroughly ventilated. The second was the fireless cooker type. The electric oven was heavily insulated and so was comparable to the fireless cooker gas oven. Since these three ovens gave different results, each series of biscuit was run in two different ovens, using the ordinary gas oven each time for comparison. Table 1 gives the length of time necessary to cook biscuit in the two types of gas ovens.

It would seem from this table that in the fireless cooker gas oven the biscuit cooked more quickly. On further examination it was found that the crust became overcooked very rapidly but the crumb of the biscuits did not seem to be as well done as those of the first series.

TABLE 1

A. Quick meal gas range series

WEIGHT DOUGH	WEIGHT COOKED PRODUCT	PER CENT LOSS OF WEIGHT	TIME OF BAKING	TEMPERATURE
<i>grams</i>	<i>grams</i>		<i>min.</i>	<i>degrees C.</i>
190.1	148.1	22.09	15	250
190.9	148.3	22.31	20	225
192.2	140.8	26.74	25	200

B. Fireless cooker gas range series

191.2	155.0	18.92	10	250
189.5	148.8	21.47	12	225
192.9	142.7	26.02	20	200

Since the difference in water loss was so great at the different temperatures it was decided best to investigate the whole range of temperatures in order to find the limits. Before doing this an experiment was planned to show whether the evaporation of water takes place to a greater extent before or after the biscuit reach the maximum temperature. Five experiments were carried out in each oven. The results are given in table 2.

These results would indicate that the greater per cent of moisture was lost by the time the inside of the food material reached the maximum temperature. Since it is desirable to retain as much of the moisture

TABLE 2

A. Fireless cooker gas range series

WEIGHT DOUGH	WEIGHT COOKED PRODUCT	PER CENT LOSS	TIME	INSIDE TEMPERATURE	OVEN TEMPERATURE
<i>grams</i>	<i>grams</i>		<i>min.</i>	<i>degrees C.</i>	<i>degrees C.</i>
191.5	185.9	2.91	3	80	250
191.0	173.5	9.16	6	96	250
190.4	166.1	12.71	9	100	250
194.5	163.0	16.19	12	100	250
191.1	159.1	17.09	15	100	250

B. Quick meal gas range series

191.9	185.4	3.33	3	65	250
192.9	178.4	7.51	6	92	250
190.0	170.2	10.42	9	98.5	250
190.9	163.6	14.30	12	98.5	250
192.1	153.1	20.30	15	100.0	250

as possible, the more quickly the biscuit can be brought to this temperature, the better the results will be.

In the table below, table 3, are recorded the water losses for over 50 sets of biscuit. In order to secure exactly the same proportions for all of these, sufficient dry ingredients for the series of experiments were sifted together and the necessary fat for the entire amount added. This was thoroughly mixed. For each part of the experiment the same amount (127.5 grams) of dry ingredients was carefully weighed out, and the desired amount of water was added. The thickness of the biscuit was kept uniform by rolling them out between two strips of hard wood which were fastened to the baking board. The same biscuit cutter was used throughout the set of experiments to insure uniform size. Tables 3, 4, and 5 give the results of these experiments.

TABLE 3
Quick med gas range series

WEIGHT BEFORE BAKING	WEIGHT AFTER BAKING	PER CENT LOSS	TIME OF BAKING	OVEN TEMPERATURE	INSIDE TEMPERATURE	GAS USED
grams	grams		min.	degrees C.	degrees C.	cu. ft.
196.6	158.0	19.63	15	250	100	7.0
195.0	156.5	19.74	15	250	100	7.0
184.0	149.0	19.23	15	250	100	7.5
195.9	148.5	24.19	20	240	100	9.5
196.2	148.2	24.48	20	240	100	10.0
194.4	151.0	22.32	20	240	100	10.0
189.4	144.4	23.7	23	230	100	8.5
192.9	148.1	24.26	23	230	100	10.0
190.7	143.4	24.80	23	230	100	10.0
196.9	149.5	24.07	26	220	100	8.5
191.0	144.5	24.39	26	220	100	9.0
190.0	140.5	26.04	26	220	100	6.0
197.3	148.5	24.73	30	210	100	10.0
197.2	148.2	24.89	30	210	100	10.0
195.8	147.3	24.76	30	210	100	10.0
198.5	143.0	27.93	35	200	100	12.0
194.5	142.0	27.04	35	200	100	11.5
192.2	140.8	26.74	35	200	100	12.5
199.2	142.5	28.46	40	190	100	12.0
197.7	140.0	29.08	40	190	100	12.0
190.8	137.0	28.19	40	190	100	12.0
191.2	129.2	32.42	45	180	100	14.5
191.6	132.5	30.80	45	180	100	15.0
186.5	130.9	31.25	45	180	100	15.0
193.4	130.0	31.25	50	170	100	15.0
190.8	130.1	31.79	50	170	100	15.0
193.8	132.8	31.47	50	170	100	15.0

TABLE 4

Pireless cooker gas range series

WEIGHT BEFORE BAKING	WEIGHT AFTER BAKING	PER CENT LOSS	TIME OF BAKING	INSIDE TEMPERATURE	OVEN TEMPERATURE
grams	grams		min.	degrees C.	degrees C.
193.5	140.1	27.56	18	100	250
192.4	142.9	25.66	18	100	250
192.1	142.7	25.73	18	100	250
194.0	140.4	27.67	23	100	240
192.5	140.8	26.85	23	100	240
191.6	138.0	27.97	23	100	240
193.4	133.4	31.01	28	100	230
192.6	132.9	31.00	28	100	230
190.6	130.4	31.58	28	100	230
191.2	131.4	31.30	33	100	220
191.2	131.8	31.31	33	100	220
191.7	130.7	31.71	33	100	220
191.2	130.9	31.53	38	100	210
191.5	131.0	31.61	38	100	210
190.7	130.6	31.55	38	100	210
193.1	131.4	31.96	43	100	200
189.8	129.4	31.85	43	100	200
192.1	130.9	31.85	43	100	200
191.2	129.7	32.15	48	100	190
187.6	130.9	30.22	48	100	190
192.0	130.5	32.03	48	100	190
186.9	132.5	29.10	53	100	180
188.1	126.4	32.80	53	100	180
190.2	129.0	32.17	53	100	180
192.1	129.1	32.81	58	100	170
190.5	128.4	32.60	58	100	170

TABLE 5

A. Average of series in quick meal range

PER CENT WATER PRESENT	AVERAGE WEIGHT DOUGH	AVERAGE WEIGHT BIS- CUIT	AVERAGE PER CENT LOSS WATER	TIME OF BAKING	OVEN TEMPERATURE
	grams	grams		min.	degrees C.
34.10	195.8	157.2	19.68	15	250
34.10	196.0	148.3	23.66	20	240
34.10	197.0	145.9	24.41	23	230
34.10	193.9	147.0	24.82	26	220
34.10	196.7	148.0	24.79	30	210
34.10	196.5	142.5	27.48	35	200
34.10	195.9	139.7	28.57	40	190
34.10	189.0	131.7	30.03	45	180
34.10	192.6	131.9	31.50	50	170

TABLE 5—*Continued*
B. Average of series in fireless cooker range

PER CRY WATER PERCENT	AVERAGE WEIGHT DOUGH	AVERAGE WEIGHT BIS- CUIT	AVERAGE PER CENT LOSS WATER	TIME OF BAKING	OVEN TEMPERATURE
	grams	grams		min.	Degrees C.
34.4	192.3	142.8	25.69	18	250
34.4	192.8	139.2	27.82	23	240
34.4	193.0	133.1	31.00	28	230
34.4	191.6	131.3	31.44	33	220
34.4	190.6	129.8	31.92	38	210
34.4	192.1	130.7	31.95	43	200
34.4	191.6	130.1	32.19	48	190
34.4	189.1	127.7	32.48	53	180
34.4	191.3	128.6	32.70	58	170

These experiments show very conclusively that the best range of temperature for the ordinary gas range, working from the standpoint of the water loss, is between 210°C. and 250°C. In order to check up on the lightness of these biscuit, the following experiment was planned. A definite mixture was prepared as before but mixed with a little less water than in the preceding experiment in order to lessen the loss in mixing. One-half cup of the mixture was used in each series of biscuit. The specific volume of these biscuits was determined by a slight modification of the method suggested by H. L. Jackson.²

The method as used in our experiments was substantially as follows: A container whose volume in cubic centimeters had been accurately determined by filling with water, was thoroughly dried and then filled to overflowing with the millet seed, which had been carefully sifted. The excess of seed was leveled off with a long spatula. Great care was taken to prevent packing down of the seed in this process, since it had been determined by experiment that there was a large possibility of error entering into results from this source. The weight of the quantity of seed which just filled the container was determined. This determination of volume and weight was repeated several times and the average of results taken.

The volume of 1 gram of the seed was calculated by dividing the volume of the container by the average weight in grams of the amount of seed necessary to exactly fill the container. This volume was found to be 1.3 cc.

The weighed portion of food whose extensivity was to be measured was

² H. L. Jackson, Jour. Ind. and Eng. Chem., Dec., 1914.

placed in the container of known volume. Enough of the measured volume of seed to fill the container to overflowing was poured in around and above the food specimen and the excess leveled off with the spatula with care to prevent packing down the seed. The portion of seed left over after the container was filled was carefully weighed. The volume of this seed displaced by the object to be measured was calculated and taken as equivalent to the volume of the object. The specific volume, or extensity, of the food was calculated by dividing the total volume in cubic centimeters of the food by its weight in grams.

The error in results was found to be small, as indicated by variations in successive trials, where no trouble was occasioned by the seed adhering to the food.

The results are given in table 6.

TABLE 6

WEIGHT DOUGH	WEIGHT COOKED PRODUCT	PER CENT LOSS	PER CENT WATER INCORPORATED	TIME	OVEN TEMPERATURE	PER CENT TOTAL MOISTURE LOST
<i>grams</i>	<i>grams</i>			<i>min.</i>	<i>degrees C.</i>	
71.7	57.4	19.94	27.89	17	250	71.49
74.2	58.2	21.56	26.95	20	240	80.00
73.4	56.6	22.89	27.23	23	230	84.03
77.2	59.0	23.57	25.90	26	220	91.00
73.7	56.3	23.60	27.13	30	210	96.00
73.6	53.1	27.30	27.17	35	200	100.00
WEIGHT SEED DISPLACED	VOLUME SEED DISPLACED	SPECIFIC VOLUME	CHARACTER OF PRODUCT			OVEN TEMPERATURE
<i>grams</i>	<i>cc.</i>					<i>degrees C.</i>
96.0	124.8	2.17	Done hard, crust very brown.....			250
100.0	133.3	2.29	Done not hard—good brown.....			240
99.0	128.7	2.27	Much as above.....			230
99.5	129.3	2.19	Much as above.....			220
92.0	119.6	2.12	Done hard, crust not good brown.....			210
84.0	109.2	2.05	Very dry, crust hard and pale brown....			

These experiments would indicate that from 240°C. to 220°C. is the most favorable range of temperature for the proper standard of lightness of biscuit. At 250°C. although the average of water loss is less, we find that the specific volume was a little less than it was at 240°C. which was probably due to the fact that the crust was formed before the biscuit had risen sufficiently. Below 220°C. the product was not very attractive in appearance and tasted dry. At 200°C. 100 per cent of the moisture incorporated had been lost. The specific volume was

at the maximum at 240°C. and 230°C. and the product was most attractive when baked at this temperature.

It seemed desirable to find out whether adequate addition of water would make results as desirable at 200°C. as at a higher temperature. The table shows that 71.49 per cent of the moisture incorporated had been lost in baking at 250°C. This per cent of the 20 grams incorporated would be 14.29 grams. The total amount, 20 grams, minus 14.29 grams leaves 5.71 grams of water retained with half a cup of flour at 250°C. At 200°C. 100 per cent of the moisture incorporated had been lost. Six grams of water were added in a second experiment at 200°C., making a total of 26 grams of water incorporated. The biscuits were baked at this temperature for 35 minutes as before. The figures obtained were:

WEIGHT DOUGH	WEIGHT COOKED PRODUCT	PER CENT LOSS	PER CENT WATER INCORPORATED	PER CENT TOTAL MOISTURE LOST
grams	grams			
75.5	55.7	26.22	34.43	76.15

Calculation shows that 6.2 grams of moisture were retained in this experiment as against 5.71 grams at 250°C. The product obtained in this way was equally as moist to taste as the one obtained at the higher temperature. The crust was hard, but this could be remedied for practical purposes by the addition of fat to the outside of the crust. The color was not so good at the lower temperature, however, and a dough with this percentage of moisture is difficult to handle.

There is so little data on the decomposition of fat at definite temperature that it seemed advisable to find out whether in biscuits cooked at the higher temperatures the fat was decomposed to any extent. A comparison was made of the iodine absorption number, the saponification number, and the volatile fatty acid number, in the fat extracted from the uncooked lard and flour mixture and from the cooked product. These experiments will be published in detail later. It is enough to say here that the difference between the numbers obtained from the uncooked fat in the mixture and the cooked product lies within the limits of experimental error. There was no indication of any trace of oxidized acids as indicated by a petroleum ether test.

All of this work on temperatures was checked up by the use of the electro thermocouple. In this the galvanometer was connected with two thermocouples, one in the oven and one in the biscuit under exami-

nation. The galvanometer could be switched into the circuit with either, interchangeably.

The first work with this was the determination of the length of time necessary to maintain the inside of the biscuits at 100°C. in order to have the product become thoroughly done. Table 7 gives the results of this work.

A comparison of the results obtained in the Hot Point Electric oven and in the Quick Meal Gas Range oven through the same range of temperature was made. Table 8, A and B, show the lengths of time needed for cooking and the moisture losses in the two stoves.

TABLE 7

After 2 minutes.....	pasty
After 5 minutes.....	pasty
After 8 minutes.....	average standard of doneness
After 10 minutes.....	slightly dry

TABLE 8

A. Quick meal gas range series

WEIGHT DOUGH	WEIGHT COOKED PRODUCT	PER CENT LOSS	OVEN TEMPERATURE	TIME NEEDED TO REACH 100°C.	TOTAL TIME
<i>grams</i>	<i>grams</i>		<i>degrees C.</i>	<i>min.</i>	<i>min.</i>
194.5	157.0	19.3	250	7	15
193.7	149.6	22.8	240	11	19
191.8	145.0	24.4	230	16	24
195.8	147.3	24.8	220	19	27
194.9	146.2	25.0	210	23	31
195.1	142.7	26.9	200	27	35

B. Electric hot point oven series

192.7	160.8	16.6	250	6	14
193.1	158.0	18.2	240	10	18
194.2	151.3	22.1	230	14	22
195.3	150.4	23.0	220	17	25
192.9	148.2	23.2	210	21	29
191.0	143.9	24.7	200	25	33

CONCLUSIONS FROM WORK ON BISCUIT

The moisture losses at the different temperatures and the variations in specific volume at these temperatures seem to make the following conclusions apparent:

1. That the moisture loss increases in all of the ovens as the temperature employed becomes lower and the time necessary for baking consequently longer.

2. That the most favorable temperature range for biscuit is from 240°C. to 210°C. inclusive, the moisture losses being fairly uniform through this range, the character of the crust good, and the specific volume at the maximum. Above 240°C. the specific volume is a little less, due probably to the crust being formed before the biscuit had risen to the maximum. Below 210°C. the specific volume again decreases through loss of moisture, the crust becomes unattractive, and the interior of the biscuit very dry.

3. That the inside temperature at any oven temperature used is sufficient to cook the starch present, 100°C. being reached in every case before the biscuit is done.

4. That it is possible to vary the proportions of moisture to adapt a dough to baking at a lower temperature so that the product is satisfactory from the standpoint of moisture content, but that the resulting dough is hard to handle and not so attractive in appearance as the material baked at the higher temperatures.

WAGE WORTH OF SCHOOL TRAINING¹

MARY SCHENCK WOOLMAN

The heads of well known trade schools, leaders in the Trade Union movement, and a group of makers of statistics have been consulted in the preparation of this review.

This book is the result of an analytical study of 600 women, involving the seeing of 20,000 girls at work, and conferring with foremen, forewomen, and managers. Textile factories were selected for the field of investigation covering the manufacture of fibers into fabrics, the knitting of them into hosiery, the construction of materials into gloves, corsets, curtains and garments, and laundry work. The study was made in fulfilment of requirements for the degree of Ph.D. at Teachers College.

The author was well equipped for the task, having had many years of experience as a teacher of girls and having held large executive positions in technical schools for girls and women. Careful research and earnest thought are evident throughout the book and keen perception of the need of better elementary education. The personal contact with the

¹ Wage Worth of School Training. By Anna Charlotte Hedges. New York: Teachers College, Columbia University, 1915, pp. 173. \$2.00.

problem gives a live interest which will be especially helpful to those who know little of the preparation of workers for their occupations; the conditions under which women work and the wages they receive. It will be well, however, for such readers to hesitate to accept the many positive statements made until they have consulted other workers who are closely in touch with these same problems but whose experience has brought them to other conclusions. The book would have been more useful and complete, it would seem, if the opinions of those engaged in trade or vocational schools and of the leaders in the trade union league could have been cited, on account of their long study and observation of skilled and unskilled workers, and for the reason that the results of the follow-up systems of the trade schools are available.

The plan of the investigation was to find the type of girl who succeeds, the technique of operations by which she earns her living and the conditions under which she works. Questionnaires and personal interviews gave a basis for statistics from which deductions were made. The conclusions relate to the need for improvements in education in the regular school, the advisability of coöperation between the school and industry, and the wisdom of training the majority of workers in the factory itself. The conclusions as stated briefly in the preface are satisfactorily presented.

The author states that a result of her inquiry has been "to turn her from her prior position, as an advocate of trade training for girls whose schooling must be limited to the grammar school, to the viewpoint of more and better general education for all grammar school girls, irrespective of their careers beyond the elementary school." In her advocacy of the elementary school as a better preparation than the trade school for working in textile industries (including industries such as the electric operating garment trades), she has in mind and describes an ideal education not now to be found in the usual public school. Undoubtedly if the elementary schools were of this character or likely soon to become so, and if the children could be kept in attendance until graduation there would be little need for trade or vocational schools of the elementary type, as they were organized largely to make up for the defects of the elementary school.

It is not probable in this generation that the better class of elementary education will be found except perhaps in a few aspiring places. The impossibility at the present time of keeping the majority of children in the schools makes necessary the organization of trade or vocational training that these crude young workers may have a chance in life.

In addition the majority of girls of fourteen coming into industry have been found to be too young and immature to "select wisely and follow skilfully" any occupation even when "careful preparation" has been given them. They need more specific training before the trade is a good place for them. The elementary school can guide them, but preparing them at this early age for industrial success is a more difficult matter. The trade school has proved to be a significant step for them toward better wage earning ability—the young worker is too apt to have many slack seasons and this time has been well utilized in the classes of the trade schools.

It is true that the factory itself should be the ideal place to train young workers, but, as yet, the worker-teacher seldom understands how to benefit each pupil by her teaching beyond a mere added skill at a machine. She should so train these girls that they would be able to fit into other similar trades by giving them a foundation of knowledge of the trade and facility in taking up new problems and not mere speeding on one machine. It is difficult for a worker to consider the development of the girl as more important than the rapid completion of the product. The time will come undoubtedly when the bridge between the skilled worker and the skilled teacher will be crossed, but, at present, the factories are not well equipped for the education of young workers. The trade unionist is alarmed at such short methods of training and feels the benefit attained is for the employer rather than for the girl—her small added wage is not all that is required to give her the chance in life she should have.

In a short review it is impossible to indicate the many points where there is room for opposing views. The book is full of positive statements and deductions which are at variance with the findings of many of those who are giving their lives to vocational education and of those interested in giving "a chance" to the working girl, and of makers of statistics. "Industry is so specialized today, and promises to be much more so in the future, that preparation for any operative line seems time and money wasted" is asserted without the accompanying fact that the trained worker is tending away from specialization. "Trade schools belong to the past." "The best trade schools can not approach factory conditions," and "Trade schools are expensive" are statements which have strong contradictory arguments.

There seems no evidence that the writer consulted leaders in trade school work or trade unionists for their points of view and yet they are in more close contact with the problems of the wage worth of school training than are those who were consulted to obtain statistics.

FOR THE HOMEMAKER

THE BUSINESS OF HOMEMAKING¹

MRS. HARVEY M. HICKOK

When vocational training began to be emphasized in the schools it was inevitable that the business or industry of homemaking should be examined for teaching content. Homemaking occupies the time and energy of the majority of women, its success or failure has a vital connection with the welfare of us all, and there is increasing discontent with inefficiency. No longer is the home an independent unit where the family may do as it chooses; rather it is a demonstration that the sum total of all the family activities, the final resultant of the family life, is an acceptable share in the larger community life.

Modern industrialism has taken most of the gainful productive processes from the family group, forcing the man partner in the family out of the home to gain an income, depriving the woman partner of her former share in these processes, and leaving her a work in the home which has to do with the consumption of goods, a work formerly shared by the man.

It is important to note how this separation of the two partners has affected the home life. The loss to both man and woman of the companionship and interested assistance of the other during the long hours of productive labor is not made up by a companionship during those periods given over mostly to recuperation. If division of production and consumption is to remain, and both the partners of the home cannot equally participate as producers of income and directors of consumption, it is essential to the continued satisfaction in the partnership that this mutuality of functioning be retained as far as the free time of the father partner will permit.

American conditions are demanding expert service as relates to the consumption of economic goods. American people have become expert as producers of incomes, but our increasing population and the

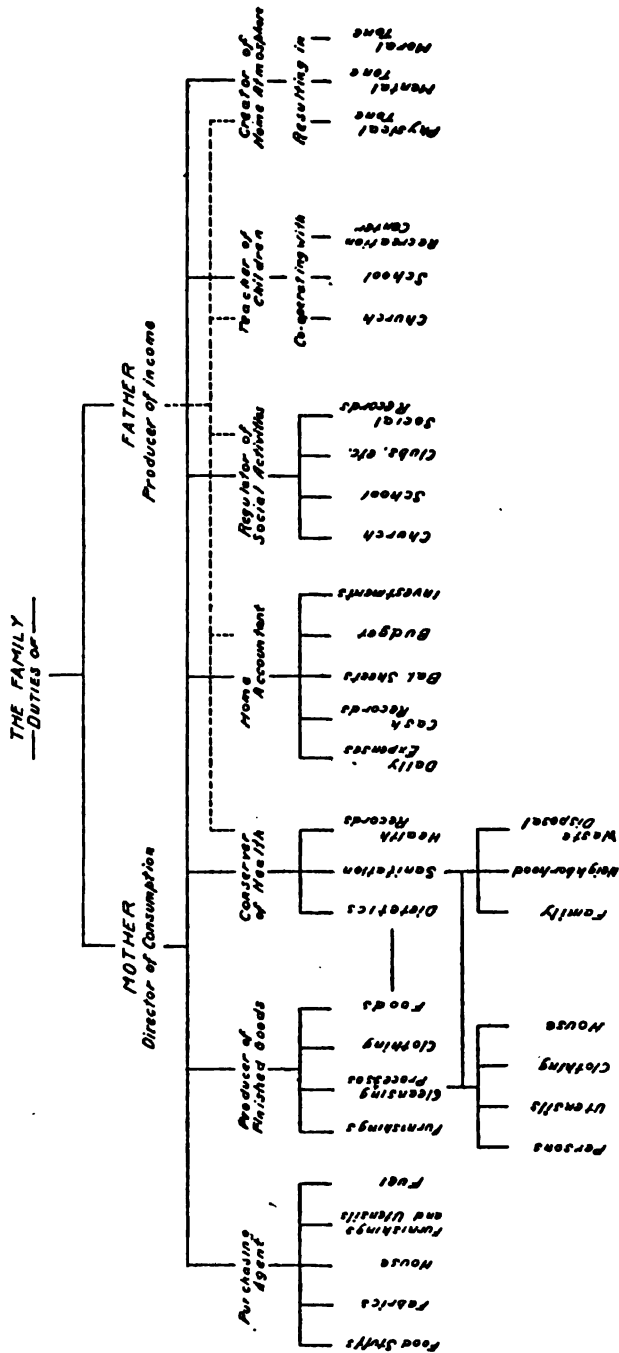
¹Presented at the annual meeting of the National Society for the Promotion of Industrial Education, Minneapolis, January, 1916.

lessening of natural resources, even before the enormous waste of the great European war, have focussed serious attention on the use we make of the goods produced. We are beginning to make some progress in the economy of spending. The average American family must succeed in demonstrating its family right to purchase goods as it pleases, to direct its own consumption, or it may wake up to find its members involved in a species of slavery where the same competent brains of the successful employer, now deciding what rewards are due the workers in production, will also decide how and for what these workers may spend their earnings. Since the father must go outside the family to produce the goods to consume, or their equivalent called income, the mother, left in the home, must adjust the family consumption to modern conditions, if the family is to have a safe solvent basis on which to build its family life.

The woman must be trained for her business. It is no more possible for a woman to manage a household instinctively than for a man to succeed in a business of which he knows nothing. Is there a more important subject before the educational world in America today than the type of education necessary to produce the well trained home manager or expert on the consumption of goods? Where this preparation is not utilized in the position of home manager of the smaller family unit, an extension or specialization of some part of her training will be found a most acceptable community service and subject her the least to open competition with men now engaged in the usual productive activities.

Can the functions of the woman partner, the comptroller of consumption, be so formulated as to be a basis of a definite teaching program to fit women for the business of home making, either in the typical family of father, mother, and children, or in some form of an "associated group?" The accompanying diagram attempts to give these functions in graphic form. No analysis of the work of the father as producer of income is intended. The dotted lines suggest what functions he can best share, considering the time and energy left by his outside work. The analysis also presupposes a more comprehensive definition of solvency than that usually understood in the business world.

"Family solvency is that condition arising from a wise adjustment of all the family resources where the family is able to meet all its immediate obligations, and in addition is conserving enough capital to warrant a reasonable assurance that future obligations will be met," and to "insure a continuity of the best in race and family heritage."



"Family resources include not only the income from outside sources, but also all services and differences in value which any member may add to raw material before it is acceptable for family consumption; and also all those services and added values contributed by any member to the community group. Those families, none of whose members assist in the upbuilding of the community life, beyond the securing of their own safety and comfort, are not meeting all their immediate obligations, and are allowing other families to pay their bills to that extent."

There are seven main functions to be executed by the woman partner in the home. First, she must be a good purchasing agent. She must understand and remember shifting market conditions, the nutritive values and costs of pure food stuffs, the wearing, sanitary, and aesthetic values and costs of fabrics, furniture, utensils, and housing. The family needs are so diversified that expert knowledge of many different goods—milk and shoes, furniture and meat, underwear and fuel, is demanded of the woman home purchasing agent. She must know exactly how much she can spend and for what and when it should be spent. When more than the merely physical demands of the family can be afforded, a distributed system, where each kind of purchase has its own allotment of the total income, will be found to yield the most data for satisfactory comparisons. A tentative budget may be drawn up, combining the past demands of that particular family and the best practice found workable in other similar families. After a conscientious adherence to this budget for a year, or through the seasonal changes, a more permanent budget may be worked for that family.

Definite training in purchasing is an essential for the woman director of consumption. When she fails as purchasing agent, extraordinary efficiency must be displayed by the father of the family or insolvency of the family will result. When the man partner attempts to supply this deficiency, either by trying to earn more than he normally can produce or by being the purchasing agent himself, it may result in using just that amount of energy needed to turn the scale in his business affairs.

Second, the mother partner must be a producer of finished goods from raw materials. The preparation of foods from food stuffs, of clothing and furnishings from fabrics, the numberless services connected with an acceptable arrangement of these finished products for consumption, and the cleansing processes demanded in the modern home, constitute most of the physical labor to be accomplished by the home partner.

All of the productive processes in the home are facilitated by the application of the principles of scientific management. There are many homemakers who are "forehanded" in their work. All the dozen or so principles of efficiency taught by Mr. Emerson and others have been practiced for years by the efficient manager in the home, although she may not have called them "standardizing," "routing plans," "time schedules," "dispatching," or "efficiency rewards."

When one adds that it is the business of the producer of finished goods in the home to employ, train, superintend, and suitably reward all domestic labor, an additional emphasis is laid on this part of the home partners work. Whatever she knows of psychology and pedagogy, sociology and ethnology, in addition to productive processes, will find an extended field for application.

The solution of the domestic labor problem is a woman's job, and, if it is ever to be accomplished in America, the customs and usages as to duties and privileges of the household worker must be standardized. This means a coöperation and consensus of opinion of the women employing labor in their homes. Standardization is as important in home work as in any outside industry, and there is no reason why it cannot be accomplished by women. So far women managers have made their own laws and customs without regard to establishing standards. Until competent and intelligent women can feel some security and dignity in domestic service, they cannot be expected to enter it, even if the net income and comfort exceeds their present rewards in shop or factory.

Third, it is the duty of the mother in the home to conserve the family health. The beginnings of prophylaxis or prevention of disease include a conscientious adherence to prescribed food schedules. A knowledge of the fundamental principles of nutrition is more important than an exhaustive knowledge of the old time empirical formulae known as recipes. The close relation between dietetics and food preparation is indicated on the chart as well as the connection between sanitation and all cleansing processes. Home sanitation demands clean air, clean food, and clean surroundings. Neighborhood sanitation will determine the limits of family neglect, but within these limits the family is responsible for its own health. Family safety from communicable disease demands active interest in all questions of neighborhood sanitation, especially the disposal of waste. It is important that the father in the family lend his interest and assistance in these outside community problems.

An important part of the work of the home conservator of health is the recording of the regular examinations made by physician and dentist. Although the school is beginning to supply this service for the children, it is just as necessary to take physical inventories of the adult members of the family.

The work of the woman as home accountant is perhaps, in America, the least understood and practiced of any of these functions. A family cannot be in a solvent condition with no definite records as to its consumption of economic goods. A system of keeping daily purchase records can be made simple enough to fit any condition of time or skill; but whatever system is used it is essential to record truthfully the purchases made. The price of a matinee ticket or the extravagance of a useless article of personal adornment must not appear to the eyes of the trusting man partner as an extra bill for meat or sugar. Neither can the man retain the confidence of the woman partner if he makes false expense returns against the family income. Such transactions are as dishonest under the family roof as in any more closely watched business house.

It is necessary for the complete safety of the family that monthly summaries and yearly inventories, balance sheets and budgets, be worked out and agreed upon by both partners. All questions of the standards of the family life must be adjusted to the earning capacity of both family partners if these material considerations are not to overshadow continually other phases of the family life. Both partners should fully understand and agree upon the conditions governing all savings, insurance, properties, or other investments affecting family welfare.

There is no question relating to home making which is attracting more attention in America than that of home finance. What other nations have done, our suddenly realized need for our own savings, and the efforts made by banks and other financial institutions, have induced a nation-wide campaign for the cultivation of thrift. The year 1916 marks the 100th anniversary of the first Savings Bank in the United States. There is an opportunity for our banks to interest themselves more definitely in home finance, as only they have the machinery to cultivate certain capacities of the home accountant.

The fifth function indicated is that of regulator of social activities. One of the needs in American home life today is a centralized authority which has the power to regulate the family behavior as regards social affairs. Although a large share of the details of all plans for recreation must fall on the mother partner, it is practically impossible for her

to succeed without the sympathetic support and assistance of the father who is familiar with the world of men.

The economic waste of over amusement appears, not only in the excessive proportion of the income claimed by amusements, but also in the waste of time and strength badly needed for important things. A definite amusement program for the family would correlate the necessity for recreation, the conservation of time and health, and the proper budget allotment. Simple pleasures, open air excursions, informational trips to many places of interest can be had for the cost of carfare. A simple recreation schedule, alive and interesting, may be productive of invaluable family habits which so largely determine that complex thing we call social standing.

One of the most satisfying functions of the mother manager is the teaching of her children. The mother teacher has a wealth of the most interesting material and the advantage of the first six years in the child's life. It is important that definite working plans be made for the study and play periods. Better direction of the child's home activities would make more frequent the really natural attainments now so often called exceptional and precocious. Both parents are responsible for a more complete union of the child's activities in the home with those of the church, school, or recreation center.

Emphasis should be laid on training the ideality of childhood. The child who has had an opportunity to live in an imaginative world at the time when he was acquiring many of the facts of a material existence and has learned to idealise common things, has an ability to soften the sterner realities of life. Thought habits about fairies and other good invisible forces may also lead to a basic comprehension for religious faith. Also whatever parents desire their children to preserve of family traditions of race and heritage must be taught as a supplementary education to that given in church, school, or civic center.

Finally, the woman partner is almost wholly responsible for creating the home atmosphere, that intangible resultant of the physical, mental, and moral states, that pulling together of all the family effort to reach the proper home spirit. This crowning success of the woman's effort must have the foundation of successful performance, either personally or directed, of all the other functions.

The thing which lives the longest in the memories of the succeeding generation is the home atmosphere, a subtle pervading influence, giving confidence and sympathy for living and work, reacting on family ambition and loyalty, and is the outward expression of family happiness.

READY-MADE AND HOMEMADE CLOTHING

CHARLOTTE GIBBS BAKER

The purpose of this article is to give some added discussion of the relative values, and some added data on the comparative costs of ready made and homemade garments. Clothing made by dressmaker, tailor, or seamstress will not be discussed.

In considering economy in clothing one must consider cost of material, time required for making, satisfaction obtained from wearing the garment, and the length of life of the same. In comparing the cost of the ready-made garment with the homemade too often the cost of the material alone is compared with the cost of the garment purchased. Although it is difficult for the woman at home to put an actual money value on her time, she may by careful study determine which things it is most economical to do herself and which to hire done for her. Sewing done at the expense of nerves when one is worn out with the care of children, may in the end prove extravagant. On the other hand if one sews easily and quickly, it may be economy to hire a dish washer and make one's own best dresses.

While the garment carefully made at home may have a daintier and better finish it often has not the style of the one ready made. Often the homemade dress does not turn out quite as was expected while with the ready-made the finished product may be examined before purchasing. On the other hand, it may not be possible to find in the ready-made dress just the material and design suitable for certain demands; or one may not have a figure suited to the stock designs on the market. Again, although the standard of ready-made clothing has improved in the last few years, there is often much to be desired in workmanship and materials.

In the study of which this is a report, certain garments were bought and then duplicates, exact as far as it was possible, made. In all cases the garments purchased were chosen with care to obtain the best materials, trimmings and workmanship to be had for a moderate price. Whenever they could be obtained garments bearing the Consumers League label, guaranteeing to the makers healthful working conditions and a fair living wage, were bought. With one or two exceptions garments and materials were chosen from regular stock, not at bargain sales or from remnant counters.

The figures given are mostly those for under garments although

the writer has some data for dresses and waists. Only a few definite figures will be given, though the conclusions are drawn from many more. In each case the ready-made garment was purchased, then the amount of material required to duplicate it carefully calculated and chosen. Practically all the work was done by machine, as it was so done on the garments purchased.

Combination drawers and corset cover.....	\$1.75
Materials to duplicate, long cloth, simple embroidery insertion, and Zion lace, good match.....	1.86
Time required for making.....	6 hours

This garment was more elaborately trimmed than those given below. Any profit from making this garment would have to be in the form of satisfaction and increased wearing quality, and it is doubtful how much of either there would be.

Combination drawers and corset cover.....	\$1.00
Materials to duplicate, muslin, simple embroidery edge, and beading.	.90
Time required for making.....	4 hours

In this case the garment was much simpler and there was more profit in making.

Combination, marked down because soiled.....	\$.75
Materials to duplicate, long cloth and beading.....	.70
Time required for making.....	3 hours

The material of this garment was good; there was no trimming except a lace beading around neck and armholes. One's time is not well paid in making this.

The following group of garments shows the balance of profit a little more on the side of the homemade articles.

Night gown.....	\$2.25
Materials to duplicate, nainsook, embroidery insertion and lace edge.....	1.40
Time required for making.....	5 hours

With very little trimming the fine material required some hand work.

Night gown.....	\$1.00
Material to duplicate, long cloth and scalloped tape.....	.60
Time for making.....	1½ hours

The trimming here is almost a negligible quantity.

From these and other figures obtained it would seem that one saves more money in making the plain garments of good material than in

making the more elaborate lace trimmed ones, even when one buys good quality in the fancy ready-made articles. (The following figures for a fancy waist seem to show this to be true also.

Cost of waist.....	\$10.00
Materials to duplicate, lace, georgette crepe, chiffon, silk, beading, buttons, and 50 cents for hemstitching.....	8.30
Time required for making.....	17 hours

The waist was bought early in the season from new stock, was well made, and pretty. Ten cents an hour is not much remuneration for the kind of work required to make a waist of this sort, and unless one is fairly well skilled there is no question that the effect of the ready-made waist would be better than that of the homemade.

While figures show that, with good buying, colored wash dresses may be purchased for about as little as one can make them for, there is greater added satisfaction from homemade garments of this sort than from undergarments. The shrinking and fading is often serious in the ready-made dress, and, by careful choice of material and proper care, may be avoided in the homemade. It is of course possible to obtain high grade ready-made dresses, but one pays enough for them to make it profitable for the woman who sews well to make her own, unless her time is of greater value for something else.

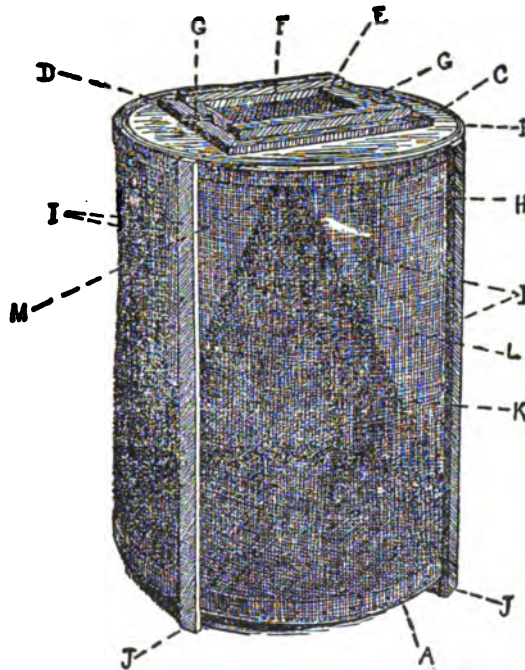
By buying carefully out of season or at remnant and bargain sales one may often save, both on ready-made garments and on materials. One should know, however, just what will be needed, and not be led astray by apparent bargains which will not fill one's demands.

There are, of course, on the market many garments of very poor material, trimmed and over trimmed with cheap lace, so made that with the first washing they go to pieces. These are not considered in this article. For the busy woman who wants simple garments of good material there is little saving in making them at home. If one has unlimited time and wishes to spend it in putting hand work on one's clothes the problem is a different one, for that sort of work is expensive to buy. On waists and dresses it is often the touch of hand work which gives distinction, and a comparatively inexpensive dress may in this way be given exclusiveness.

The possibilities of the market will in many cases determine how one shall buy, the city shopper always having the advantage over her small town sister. In any case, however, all considerations must be carefully balanced, and each must determine for herself how she shall buy.

THE HOMEMADE FLYTRAP

Entomologists of the U. S. Dept. of Agr. have made tests with a homemade flytrap which has proved to be the most effective device of the kind for catching flies at creameries, in butcher shops, in barns, and in and around houses. This trap also is excellent for outdoor use, especially near insanitary privies and other places where flies gather and breed. It has the advantage of being inexpensive and easy to make, handle, and keep in repair.



(A) Hoops forming frame at bottom. (B) Hoops forming frame at top. (C) Top of trap, made of barrel head. (D) Strips around door. (E) Door frame. (F) Screen on door. (G) Button holding door. (H) Screen on outside of trap. (I) Strips on side of trap between hoops. (J) Tips of these strips projecting to form legs. (K) Cone. (L) United edges of screen forming cone. (M) Aperture at apex of cone.

The trap pictured is 24 inches in height, with a diameter inside the hoops of 18 inches. The cone of wire inside the trap is 22 inches high.

The bottom frame of the trap is made by fitting two flat barrel hoops one inside the other so that the inside diameter is 18 inches. The upper part of the frame is made in the same way, but a round board is fitted tightly into the hoops to form the top. In the top board a hole 10 inches square is cut. Parallel to the sides of this opening and

about an inch from them should be nailed half-inch strips. Into these little jambs should be fitted a screened frame which should be held tightly in place by wooden buttons.

To make the cage, nail 12 or 14 mesh screen wire 24 inches wide around the top and the bottom, and wire or solder the lap, so that no flies can escape. Outside the screen nail to the top and the bottom frames at equal intervals four 25-inch laths or strips of wood, allowing them to project 1 inch at the bottom to form legs for the trap and leave for the flies an entrance into the cone.

The cone for a trap of this size should be 22 inches high and of such a diameter at the bottom that it fits exactly inside the lower hoop, to which it should be closely tacked. In making the cone it is easiest to experiment with a large sheet of stiff paper until a cone of the right size has been made. This paper when cut will be a pattern for cutting the wire screening. An easy way to make this pattern is to use a semi-circle of paper with a radius of 24 inches. It will take about two-thirds of such a semicircle to make the pattern for a cone of the size described.

Before inserting the cone, make a small hole at the point or apex, through which the flies can crawl into the trap.

To bait the trap, place beneath the cone, on a flat saucer or a piece of board, banana skins, sirup, meat, or other foods which seem to attract flies. The flies will fly upward from the bait into the cone and continue until they go through the small hole into the cage. To remove the flies from the cage, scald them and pour them out of the opening at the top.

BREAKAGE OF JARS IN CANNING

The Office of Extension Work, North and West, States Relations Service, suggests that breakage of jars is due to such causes as—

1. Overpacking jars. Corn, pumpkin, peas, lima beans, and sweet potatoes expand in processing. Do not fill the jars quite full.

2. Placing cold jars in hot water, or vice versa. As soon as the jars are filled with hot sirup or hot water, place immediately in the canner.

3. If top cracks during sterilization, or when lever is forced down, the wire bail was too tight.

4. In steam canner, having too much water in the canner. Water should not come above the platform.

5. Cold draft striking jars when they are removed from the canner.

EDITORIALS

The Annual Meeting. Perhaps the American Home Economics Association has never held a meeting that yielded more general satisfaction to all present than the Annual Meeting in Ithaca, N. Y., June 28 to July 2. With an attendance of nearly three hundred, with each session holding meetings in addition to the general sessions, with groups of social workers, of teachers and of journalists holding conferences, the only drawback seemed to be too many attractions for different places at the same time. One difficulty in arranging programs for Home Economics meetings seems to lie in the fact that not only does Home Economics touch upon so many subjects, but most Home Economics workers are equally interested in different phases of the work. When, for example, discussions of methods of social work with leaders like Miss Winifred Gibbs and Miss Winslow, and conferences on science led by Dr. Ruth Wheeler, and including Dr. Langworthy, Dr. Dubois, and others who are actually doing research work, are held in adjoining rooms it is difficult for one who sees the great value and importance of each to choose where to go.

Miss Van Rensselaer and her co-workers found it a serious problem to provide rooms for the many conferences; yet in these very gatherings lay much of the inspiration and help gained from the meeting.

The program was carried out practically as announced. The few who could not be present sent papers. The session on Journalism was particularly fortunate in this way, since it had many speakers, and only one failed to respond by presence or paper.

Interspersed with the meetings were excursions to the many interesting places in the region. The breakfast announced on the program for Sunday morning was served in the woods cafeteria fashion, a plan for a picnic new to most of the guests.

"Omelet and Oatmelia" proved not only a "lamentable" but a delectable tragedy. Those of the cast who came back from their vacation to present it must have felt rewarded for their efforts by the manifest pleasure of the audience and by the substantial contribution that was earned for the Richards Memorial Fund.

Moving pictures and a daily singing school gave further opportunity for recreation.

The hospitality of Cornell was as generous as ever, and "still we gazed and still the wonder grew" that in addition to the regular work of the year so much could be planned and so delightfully carried out for the inspiration and entertainment of those at the meeting.

At the close of the Ithaca meeting a number went to New York and attended the meeting of the Association held in connection with the N. E. A.

A report of these meetings and as many of the papers as possible will be given in succeeding numbers of the JOURNAL.

Dean Marion Talbot of the University of Chicago who was elected president of the Association for the coming year telegraphed her appreciation of the honor conferred but, to the great regret of the Association, her inability to serve.

Miss Van Rensselaer continues as president until a new election by the Council is completed.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

The Adolescent Period—Its Features and Management. By LOUIS STARR, M.D. Philadelphia: P. Blakiston's Son & Company, 1915, pp. 211. \$1.00.

With simple diction, unencumbered by unnecessary technicalities, the author has presented a very valuable book for teachers, parents, physicians, and social workers. Chapters are devoted to the Growth, and the Development of Muscle Power, Physical Education, The Diseases of Adolescence, The Faults and Criminal Tendencies of Adolescents, Menstruation, and Sexual Enlightenment.

While no special reference is made, there is a strong suggestion that the inspiration of the writer is to be found in the first volume of Stanley Hall's work on Adolescence.

From the standpoint of teachers, it is unfortunate that no bibliography is appended, and foot notes are almost entirely omitted. There is little to indicate the authority for some of the statements which are made, about which there may be differences of opinion. As a brief compend, however, upon the important subject of adolescence, it is to be recommended as unusually meritorious.

Nostrums and Quackery. Articles on the Nostrum Evil and Quackery Reprinted, with Additions and Modifications, from The Journal of the American Medical Association. (Second Edition.) Chicago: American Medical Association Press, 1912, pp. 708. \$1.50.

This volume, which is the final result of the agitation started ten years or more ago by the American Medical Association and

a similar campaign in Collier's Magazine and which embodies also many of the results obtained by the Bureau of Chemistry, U. S. Dept. of Agriculture, in their studies of proprietary medicine and the like, gives a remarkably clear picture of the business of quackery and nostrums. Well on to a hundred so-called cures and as many proprietary medicines and toilet articles are taken up by name and the methods and materials used by their promoters are in most cases plainly shown. The very comprehensive index makes it possible to refer at once to any particular person or article in which one may chance to be interested.

The teacher not infrequently has need for data on such subjects in order to answer the questions which are put to her regarding some proprietary articles and alleged diet cures.

Water Purification Plants and their Operation. By MILTON F. STEIN. New York: John Wiley and Sons, 1915, pp. 258. \$2.50.

This book is valuable as a reference book for Home Economics students in Public Hygiene and Laundry work. The description of the purification plants and the necessary scientific processes connected with their management is given in a way to be readily understood by the student. "To make the book more readable to those not intimately connected with water purification plants, a chapter has been added on the natural chemistry of water showing the derivation of its chemical constituents from the geological formations with which it comes in contact."

The simple experiments for the analysis

of water and the determination of its hardness, such as Home Economics students may perform in connection with the laboratory work in Household Chemistry or Laundry, are given.

The reviewer believes that while it is a valuable book to be reserved as a reference book in a public library or a general library of a college or technical school it would not be expedient to purchase it for a special Home Economics Department library as the same material may be found in less technical and less expensive books.

The Means and Methods of Agricultural Education. ALBERT H. LEAKE. Boston and New York: Houghton Mifflin Company, 1915, pp. xxiii + 273. \$2.00.

This volume, which is one of the series of prize papers made possible by the generosity of Hart, Schaffner & Marx, of Chicago, contains a chapter on "The Woman on the Farm" and occasional references to the teaching of Home Economics subjects in agricultural schools. The information given on these topics summarizes the usually accepted theories regarding the value of special training for women in domestic subjects, but the amount of space devoted to it hardly seems in proportion to its recognized importance.

The Wheat Industry, For Use in Schools. N. A. BENGSTON AND DENEE GRIFFITH. New York: The Macmillan Company, 1915, pp. xiii + 331.

This little volume, which belongs to the Industrial Series, has brought together the main features of wheat production and distribution in different parts of the world. As the first chapter says, it is an industrial story of wheat, and though intended primarily for students, may be of interest to others. While it is full of accurate and useful information, the reader can not help wishing that at least the more picturesque parts of the material had been presented in somewhat more readable form.

Holy Earth. LIBERTY HYDE BAILEY. New York: Charles Scribner's Sons, 1915, pp. 171. Price \$1.00.

The Holy Earth is the first of a series of *Background Books* in which Professor Bailey "will present from time to time, in small books, his personal expressions on the important and interesting subjects to which he has devoted his life." This book might well be selected as supplemental reading or for the study of essays in High Schools.

It is refreshing to find such enthusiasm for the beauty of form and color in a perfect apple, potato, or pumpkin, and to meet the plea for the education of the young in the appreciation of the fruits of the earth.

The chapter on daily fare is recommended to students of dietetics.

Those who are trying to help the extension of Home Economics into the rural regions, and especially those who are connected with reformatory and industrial work, will find much in this volume to interest them. The pioneers who are especially fortunate in being able to take part in the founding of a new institution should read particularly the section on "A Forest Background for a Reformatory."

For all who seek rest in reading, this tribute to the Holy Earth will be a delight and refreshment.

Tobacco. By BRUCE FINK. New York: Abingdon Press, 1915, pp. 123. \$0.50.

Mr. Fink, Professor of Botany in Miami University, Indiana, gives a scientist's protest against the increasing use of tobacco in schools and colleges and especially deprecates the popular form of college entertainment—the "Smoker" now so commonly given to bring together the students of each department and, even for the purpose of helping the president of the university to learn to know his boys.

It is, however, the chapter on food and diet, showing the relation of diet to the desire for tobacco or other stimulant which should interest Home Economics teachers. For this chapter alone the book should be in every cooking room. As Professor Fink em-

phasizes, the mother must guard her boy through proper diet, as well as character building, in his earliest years.

Early American Craftsmen. By WALTER A.

DYER. New York: The Century Co., 1915, pp. xv + 387. \$2.40.

This readable and well-illustrated book serves the double purpose of acting as guide

to the collector of Americana and of introducing to the reader the personality of some of the leading early craftsmen of this country, prominent among them Duncan Phyfe, furniture maker; the Willards and Thomases, of clock-making fame; the picturesque Baron Stiegel; Paul Revere; and some of the minor potters, furniture makers, and others. The bibliography also suggests attractive books not known to the general reader.

EXCHANGES

The bulk of instruction a girl gets, both at home and in the domestic training classes of the schools, only emphasizes her idea that if she knows how to make chicken terrapin, and what kind of curtains are suitable for casement and what for French windows, she "knows her business." That is, the training she gets is almost entirely in manipulations and processes, in recipes and formulae and "ways." It is rule-of-thumb instruction. It concerns itself very little with principles. It does not aim to arouse the imagination, or to set the mind to work on the succession of problems each day turns up. [Is this true?]

The very first essential in any efficient system of domestic training must be to break up the idea that it is a collection of fixed ways of doing things; to train the mind of the girl to attack it openly; to arouse in-

terest in experimenting, in fitting work to her needs, and ways to her particular situation.

The experience in the modern factory or shop develops certain qualities, and drives in certain ideas much needed in housekeeping. It demonstrates that order is not an external, artificial condition cultivated because of a fear of what people will think if you are disorderly, but that it is a law on which results depend, and without which neither utility nor beauty is possible. It drives home the *reasons* for promptness, exactness, consideration of others.—*Ida Tarbell in the Woman's Home Companion.*

Probably the most effective way to prevent our boys and girls from using slang at home would be to make it a required subject of study at school.—*The Youth's Companion.*

BOOKS RECEIVED

- The Adolescent Period: Its Features and Management.* By Louis Starr. Philadelphia: P. S. Blakiston's Sons Co., 1915, pp. 211. \$1.00.
- Adventures in Thrift.* By Anna Steese Richardson. Indianapolis: Bobbs-Merrill Co., 1915, pp. 229. \$1.25.
- American Association for the Study and Prevention of Infant Mortality.* Transactions of the Sixth Annual Meeting, Philadelphia, November 10-12, 1915. Baltimore, Md., 1916, pp. 474. \$3.00.
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NEWS FROM THE FIELD

State College for Teachers, Albany, N. Y. On the fifth of May, there gathered at the State College for Teachers, Albany, N. Y., the teachers of household arts and sciences of the seven state normal schools. This meeting was suggested by the teachers themselves, and carried out through the efforts of Miss Marion S. Van Liew, head of the department in the State College. The sessions were chiefly discussions with Mrs. Anna C. Hedges Talbot, State Director, concerning new phases of teaching household arts and sciences, and methods of improving the normal school courses in the state.

This meeting, the first of this nature in the state, is now established as an annual gathering.

Drexel Institute announces that it can admit only 384 freshman to the regular Day Courses in The Engineering School, The School of Domestic Science and Arts, and The Secretarial School in the fall of 1916. On June 5 the Committee on Admissions and Credits had on file 154 applications for these courses alone. It is now in correspondence with over 1731 students who are interested in such work. The 1915-1916 registration totaled 785 regular day students and 1525 evening students.

The Institute exists primarily for the people of Greater Philadelphia, but students from other communities are also received. It is necessary to consider all applicants strictly in the order of their application.

Two and four year courses, and extension and evening courses in domestic science and arts are offered.

The Second Inter-municipal Conference on the School Lunch Problem was held in Boston on May 5 and 6, 1916.

The program included:

Popular Education as to Diet, Sarah Louise Arnold, Dean, Simmons College; Application of Dietary Standards to the Needs of the Normal Child, Percy Goldthwait Stiles, Ph.D., Instructor in Physiology, Harvard University; Some Social Aspects of School Feeding, Edward F. Brown, Executive Secretary, New York School Lunch Committee; Public Health and Food Education, William Eustis Brown, C. P. H., Instructor, School for Health Officers, Harvard University and Massachusetts Institute of Technology; The Importance of School Lunches in Establishing Standards of Value-received for Food Expenditures, William Morse Cole, Associate Professor of Accounting, Graduate School of Business Administration, Harvard University; Cost of Educating the Underfed Child, Ira S. Wile, M.D., Board of Education, New York City; Surveying a School Lunch System, Alice C. Boughton, Member of Staff, *Cleveland Survey*; Administrative Problems under Public Control, Emma Smedley, Superintendent of School Lunches, Philadelphia, Pa.; and School Lunch Values: The Point of Focus, Mrs. Mary H. Moran, Director, School Lunch Department, Women's Educational and Industrial Union, Boston.

It is hoped that these papers may soon be published in a condensed form and so made available for the many interested in the school lunch problem.

Home Economics in Oklahoma. The popularity of Home Economics in the schools of the West is indicated by the fact that it is necessary to double for next year the domestic science and domestic art accommodations of the Oklahoma College for Women, located at Chickasha. This is one of the few exclusively girls' schools in the West

maintained by the state. Four hundred and eleven girls were enrolled last year. Attendance showed an increase of 176 per cent in two years. Students are required to take work in household economics, and they are encouraged to take work in piano and voice by being given individual lessons without tuition charge. By applying scientific management to the dormitories, the state furnishes the very best in board and room for \$16.00 per month.

New York City Public Schools. Miss Margaret L. M. Holt, Assistant Director of Home Economics in the New York City schools, has been appointed acting director since the death of Mrs. Mary E. Williams, that took place on February 12, 1916.

Mrs. Williams had been in poor health about four years, but was much better when she was suddenly stricken with the bronchial pneumonia that proved fatal in a few days.

Mrs. Williams was one of the pioneers in the Home Economics movement, especially that branch of it which was interested in the development of the work in public schools. She was one of the first teachers of the subject in the New York City schools and was made Director in 1896. The work grew rapidly under her leadership until at the time of her death there were 233 kitchens with 238 teachers in the elementary schools, kitchens in eleven high schools, with

22 teachers; and classes in both evening and vacation schools.

A further account of her work will appear in a later issue of the JOURNAL.

Brief Notes. Mrs. J. C. Gawler, of Denver, Colorado, is to succeed Miss Helen Louise Johnson as Chairman of the Home Economics Department of the General Federation of Women's Clubs.

Mrs. Alice D. Feuling has resigned from her position as Dean of Women and Director of Home Economics in Lombard College.

The JOURNAL will be glad to be informed of any changes of positions for the coming year. Often questions come that can be answered only if we have full and correct records.

A typewritten pamphlet on Feeding the Family of Small Income, prepared under the auspices of the New England Home Economics Association, may be obtained for 25 cents at the headquarters of the Association in Boston.

Some of the study topics for 1916 of the Ohio Farm Women's Clubs are: Garden herbs and their uses; Potatoes, nutritive value and varieties; Handy kitchens; Babies, summer care—prenatal care; Country school sanitation; Family government. The study plans and articles bearing on these topics are published in *The Ohio Farmer*, under whose direction these clubs are organized.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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Partial View of a Kitchen, Showing China Closet Which Opens into Kitchen and Dining Room. (See page 493.)

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THE SIGNIFICANCE OF THE HOME¹

MARY WILLCOX GLENN

Member of the Council, Charity Organization Society, New York City

Some weeks ago I went with a group of students to visit the New York City Farm Colony situated on Staten Island. We had been shown through the large congregate building, where the greater number of the inmates ate and slept, had seen the workshops, the recreation hall, the kitchen, the store rooms and the laundry; had walked across the fields which were about to be ploughed for crops, had been taken into the greenhouse; and then we were driven from the clump of big, institutional buildings to a group of detached cottages which house, as the Charities Directory states, "the semi-able-bodied class of destitute aged poor and their aged and infirm husbands or wives."

We went at once into the most recently built of the cottages, a house planned to shelter about forty couples. Crossing the threshold we came into a square hall which served as a sitting room from which opened the dining room to the right, and the pantry and kitchen to the rear. In the dining room the tables were laid for the next meal, and one could see that care had been taken to provide fresh cloths and shining table ware for the inmates. In the kitchen a wholesome dinner was being prepared on the large range, and about the kitchen itself there was an air of efficient order that yielded assurance of attention being given to the preparation and the selection of proper meals. The furnishings of the pantry and the capacity of the ice box gave assurance also of satisfactory storing of prepared and unprepared foods.

¹ Presented at the University of Chicago Quarter-Centennial, 1891-1916, before the Department of Household Administration.

On the second and third floors of the cottage were the bedrooms for the aged couples and for the matron and other attendants, the well equipped bath rooms, and the airy, bright halls. We went from one bedroom to another, stopping to talk to the various couples that we found in them. Each room was comfortably and attractively furnished and in each had been collected some few personal belongings that gave indication of the past life of the individual occupants.

In a corner room was an Italian and his wife. He was a dignified figure that made one think of Italy struggling to be free in the middle of the nineteenth century, so much of native rectitude did he carry from the outer world into that refuge of the broken. He stood silent, while his frail, more emotional wife in rapid speech emptied her mind of an accumulation of small impressions. The Italian student with whom she talked gave sympathetic responses, and afterwards explained to those of us who could not understand their speech that the little woman was hungry for an opportunity of talking with someone who could understand her, and whom she in turn could understand. As the two talked, the tears ran down the cheeks of that unbent old man, her husband.

Across the hall was an American couple. Lying open on the table of their room was a copy of the *New York Churchman*. It was open at the page on which was printed a picture of Phillips Brooks, and, in answer to a comment, the man spoke of his own appreciation of the great bishop and of his being glad that a member of the church to which he had belonged sent him back numbers of the Episcopal Church paper. "Yes, we belonged to the Ascension Church," his wife added. Farther down the hall was an old Irish couple, on whose walls hung a rosary and pictures that showed their allegiance to their church. But as one stopped to talk, one realized that the ravages of drink had left but little mind with which the sobered couple could make response to those who visited them in their present home.

The German couple in the room at the end of the hall were taciturn, so we moved on to the third floor, and came to a room in which sat a mother with her middle-aged daughter. They had been dressmakers, and there was about them the air of those who have an ambition to set a fashion, shown by a certain pathetic precision in their manner of doing their hair and adjusting their dress. We did not know the background of their lives, but we could realize how filled it had been with hard struggle, because of the deep care stamped on the mother's face, and

the mere scraps of a mind that were left to the daughter. She, the daughter, received us, as in old days she might have received her customers, with a fluttering pretence that she could serve us well. In that fluttering effort to catch our attention we got an impression of all those vain efforts that had been put forth to seize upon a business that was slipping away.

It was soberly that we walked down the stairs, across the pleasant hall, and out on to the drive. In spite of the abundant comfort of that interior we had an impression of the pathos of the life lived there. It was the dearth of normal relationships that oppressed us. The fact was patent that the ties that had been made in the early years had not been secure enough to bind the several members of that heterogeneous group each to the locality in which were to be found men and women of likes and dislikes similar to his or her own, to hold each in a neighborhood to which in some degree he or she was native and in which the manner of life was shaped from within, not imposed from without.

To those couples, so generously provided with material comforts by the great municipality, had come the evil of a break with their world. They had seen the weakening of the bonds of relationship, and they were powerless to resist the pressure which carried them out from their shell of a home, all that was left of the home of their early ambitions, into the security of the City Home, the place dreaded in their dreams.

Perhaps in their early imagining they, too, had conceived of their lives as unfolding so that at each stage of progress there might be a pushing up to a higher plane.

Felix Adler in a recently published essay,² gives a description of the relationships that should be maintained in family life. He writes of the process of accommodation between the man and the woman; he, the man, standing in the home for the principle of differentiation, she, the woman, for the principle of integration; and the quickening of the seed of worth in the young through this process. Within the family group the individual grows in childhood through being held in right subjection; in adolescence, through a realizing of right relationships as he prepares for his life's work; in early middle life, through such reaction to his work as will elicit his distinctive gift as a worker; in later middle life, through a quickening of the reaction of his work upon interrelated callings; in old age, through a right summation of life's results and a welcome to his successor; on the brink, through the right farewell.

² *The World Crisis and its Meaning*, pp. 230, 231.

What Dr. Adler so describes is a well ordered world in miniature, a family democracy.

But, to come back to the aged couples at the Farm Colony, those old people in their complete detachment seemed to offer, as a summation of their life's result, a page blank but for the one word, *finis*. One knew that their farewell to their world had lacked the dignity of choice and of right reaction on others within their immediate group.

There was another impression one carried away, however, an impression additional to that of severed human relationships. In trying to weigh the material gains in their comfortable quarters and to picture the contrast to the squalor from which they had been rescued, one dwelt nevertheless on what the hearth, the French *foyer*, means in the life of human beings and how great is the pain of being wrenched from the seclusion and the independence of the hearth into the promiscuity of any form of congregate living. Do you remember in Synge's *Aran Islands* the description of the evicting of an old woman whose fury was uncontrolled as she was driven from the hearth over which she had brooded for thirty years? To her as well as to her neighbors the "supreme catastrophe" was the "outrage to the hearth." In the chimney corner one could realize that one had identity; about it one could gather one's kin, from its vantage ground one could gain courage to brave, as did those Irish of the Aran Islands, the "world of grey" and "of wild rains and mists" which lay without the four walls. Because it is at the hearth that one can learn, without conscious reasoning, that life develops from within, that the good life is not something that is given, but that it is something that is won—and that it is won by those who act oblivious of the fact that they are teaching and are being taught. The Eastern poet Kabir¹ writing more than four hundred years ago has expressed clearly what these two principles of family life mean, the principle of relationship and the principle of subjective value lodged in the objective fact of a home. "In the home is the true union" he wrote; "in the home is enjoyment of life" and "Lamps burn in every house, O blind one! And you cannot see them." And also, "the home is the abiding place; in the home is reality; the home helps to attain to Him who is real." That last emphasizes a third principle of family life, the principle of aspiring reverence. Without reverence for someone who stands above oneself and yet who stands very close to oneself, one cannot conceive of attaining to any form of better life. There is a fourth

¹ The Songs of Kabir.

principle that Kabir emphasizes when he writes "Look and see where the root is; happiness shall be yours when you come to the root."

In addition to the significance of the home as a means of creating and strengthening relationships, of apprehending values and of experiencing religion, there is its significance as the seed bed of democracy. George W. Russell (A. E.) says we must "begin building the state in the parish," and when he says it, he has in mind, believer in the home that he is, that the parish as a political unit is but a congregation of homes. There can be a mutually helpful relationship of fellows within the parish only if there has gone on within the primary unit, the home, a process of welding—a process which has caused adhesion, not only on an obvious plane of concrete failure and achievement, but on an intangible plane of unpremeditated exchange of unweighed services. From being so rooted, rooted in the discipline of and nourished by the incentive of stable homes, men and women can learn their parts so as to be able to play with skill, and one might say with abandon, in the greatest of all dramas, the drama of peace.

If the significance of the home be considered in terms of spiritual rather than of material advance, one can realize that its conservation is not dependent on static industrial conditions. What is essential to its life must come from within, and if the heart of the home be sound, there will be an ability to yield the things which, though they may in the past have been held to be essential to the industrial life of the home, are realized to be clogs to its progress under the pressure of a rapidly changing economic system. The principle of the hearth can be maintained even though the heating of the home be provided by a municipal furnace. It is the immaterial functions which are permanently valid; the materialistic functions which, in order that they may retain their validity, must be subject to a process of continuous change.

I was talking recently with a man who has specialized as a teacher of method of family rehabilitation. He said that as he had gone more deeply into his subject he had come to realize with growing conviction that the family has unmatched importance as a trainer, because it is a small, coherent group and can offer a normal field for practice work. Neither in its composition nor in the tasks assigned need there be in the home the element of artificiality. In a discussion of the relation between the home and the school, at the National Conference of Charities and Correction recently held in Indianapolis, one of the speakers spoke of the added emphasis that is being put on the value of the home

by a colored settlement in Nashville. The emphasis is being shifted, he said, and more attention is now being given to the visiting of homes than to the conducting of clubs and classes within the settlement.

While the findings are disproving the utility of the particular homes visited as places of training, the settlement residents can draw on their experiences as arguments for a change in customs that will make possible a readjustment which shall react favorably on the homes themselves. The residents, on going into the homes of the child members of their settlements, have found that the mothers, in many instances the sole wage earners, have left their homes in the early mornings in order to prepare the breakfast for their masters and mistresses and for their masters' and mistresses' children. In the homes which the women have left, their own children have risen late to eat the cold breakfast laid aside for them the night before. Another speaker at the same meeting of the conference told of how she was coming to realize that it was not within the factory that one was going to be able to learn how factory life really reacts on the child. To learn what the factory work means in the life of a young wage earner one needs to walk home with the child at the day's end, when for oneself one can see what that strange new experience means to him, and then meet the child on his way to work in the early morning when he is emerging from the home to become a part of the big industrial world without. These two instances of a felt need of individual contacts, that shall bring the social worker, himself, into the field of the home's influence, there to study the reactions of the world of work on the members of a family, are indications of a growing conviction that we, as workers, must be carried back more and more regularly into the home, there to get proof of our efforts' worth and to continue the practice work begun in the school or in any other center.

The need of relating the study of home administration to the life of the home itself is being more and more realized by the leaders in the departments of household administration. In a paper on the home and social efficiency, read by Mrs. Eva W. White in 1912, she drew attention not only to the more obvious fact of the relation of the home to the community, but to how within the home itself there must be the trying out of technical processes and the realizing of moral factors. The wording of the Massachusetts law on education for the home, namely, that it is "that form of vocational education which fits for occupations connected with the household," gives indication of how increasingly close must be the contacts between the teacher and the

home itself. The "model home" is, as some have expressed it, recognized to be artificial, and the "hub" of the problem is the "getting in" to the home, itself. The president of a southern college for mountain boys a number of years ago had a large sign made which read "Model School." It was hung on the front of the small building which he set apart for use as a model school. When after various efforts his conception of what makes a school model departed more and more from his own original plan and when he came to realize that the "model" is never achieved, he, one might say, willed that some of the boys should, by night, carry the sign off and destroy it.

A special reason why the home, itself, is needed to be used as the field for training is that it is within the home, itself, that the principle of economy can best be put into practice. In considering economy in relation to the home, one feels that the first thing one wants to get away from is a scrappy way of looking at either production or consumption, and that, in considering both the intake and the outgo, one does not wish to be drawn into measuring either in terms of cash, alone. In a recent article in the *Atlantic Monthly*, Henry Dwight Sedgwick deplores the tendency of science to concentrate attention on a small portion of life, and of luxury to set the center of gravity for human life in material things. The domestic science which does not relate its scientific findings and its practical conclusions to life as it is being developed in the home runs a risk of playing itself out on a plane which will lie apart from the deepest needs of the home itself. Miss Loane, one of the keenest observers of the values of the home, who had a long apprenticeship as a visiting nurse, wrote some years ago: "Thank goodness! I have realized at last that food, exercise of mind and body, clothes, housing, and moral and religious training form an organic whole." It is this organic whole that one wants to keep in mind and the need of relating any scheme to life as it is being lived somewhere.

Some years ago I was anxious to secure for a small group of women who were receiving widows' pensions from a private charitable society an opportunity for training in the spending of income, including, of course, some lessons in the purchase of materials and in the relation of one kind of expenditure to another. I went to the director of a practical housekeeping center, whose fine aim is to train for homemaking. She was interested in the organizing of such a class, but said that the difficulty lay in finding the teacher who could hold the interest of the women. It was easy to find teachers to organize and conduct classes

for young girls and for young women who were about to be or had recently been married, but classes for older women whose habits of household administration had become fixed required a degree of flexibility in the teacher which was greater than had been mastered by those who were available for the work. She went on to put a question to me, which I could not answer: Did I know how she might secure additional means so that she might engage a graduate teacher who could be used not so much for class room work as to be sent into some few homes to learn what the attitude of the homemakers was to their own problems of household management?

I was trying to open the front door of an old building in which I had had a rather futile conversation with an ancient clergyman who deplored the fact that as populations shifted in a great city, the new people who replaced the old were ignorant of the things that their predecessors had recognized as having worth. "We want to hold on to the old congregation; the new congregation does not care as my people did in the old days," he had pathetically exclaimed before I came out into the hall. The door would not open, and I felt as if I and the ghosts of past achievements were being together held in that musty corridor. "She works a little tight" said the janitor, who had belonged to the old as well as to the present congregation, as he pulled back the rusty latch and let me out into the crowded street. And you see she always does work a little tight if one rests on the scheme, no matter with what care it has been formulated, and does not put oneself to the task of finding the man, the man to whom the scheme will be merely a means, not in itself an end; a man who will be ready to throw the scheme, as a means, overboard, when he as man comes face to face with some other men who have no use for nor need of his scheme.

To return for a moment to the problem of finding a teacher for my group of widows, I do not, of course, fail to appreciate how difficult it is to make such a group realize the value of learning better methods of household management than those they instinctively employ. I do, also, realize that our efforts to bring results must in large measure be directed to the training of the young people whose habits have not become fixed. But to get lasting results with the latter group, to modify the young people's attitude to an accepted way of living so that the results will be enduring in their own later better ordered homes, there has to be a trying out.

What is at stake is a home, itself, for which some homemaker is

responsible. The teacher needs to keep her eyes fixed on the people who are to do and are at present trying to do the things that need to be done, not solely on the things themselves that she is interested in teaching someone to do.

We were sitting not long ago, a small group of men and women interested in the problem of wife desertion, to discuss how we might be more effective in our effort to protect family life in the immediate neighborhood for which we felt responsible. We listened first to the report of a young man who had been working in connection with the magistrate's court and had in the court been giving special attention to a study of the way in which the law was being enforced. His report was an encouraging one showing, as it did, that increasing attention was being given to the apprehension and the trial of deserters. Then the group went on to discuss the effect on the deserters themselves and on their families of the arrests and commitments. One man, who was very thoughtful, explained how he, a city official standing on the inside, had seen the arrest of deserters lead to an increase in the commitment of children to institutions.

We began our discussion with the emphasis on law enforcement; we ended it with the emphasis shifted to the effect of desertion, itself, on the individual members of the families concerned and on the community of which they were a part. The first part of our discussion dealt with facts, whose proof lay in the collected statistical data, the last part had to do with the reactions of human beings to measures framed for their benefit and with what lay back of the call for legal intervention. There was no possibility of our gauging these reactions and of our measuring the need of intervention by the use of the data we held. We broke into smaller groups, and carried on our separate discussions as we went out into the street. There was a feeling of futility as to the value of the conference, which we should not have carried away with us if we had adjourned after listening to the report of the first speaker, the student in the court itself. The law as a positive agent of reform would have dwelt in our minds to relieve that dismal picture of broken family life to which we had listened, if there had not been thrust upon us the more impressionistic picture of uncharted reaction to social effort and of the need of a more far reaching, a more deeply probing effort than had been employed.

This small, inconspicuous conference was recalled to my mind while I was at the recent meeting of the National Conference of Charities and

Correction. Mr. Allen T. Burns was speaking, with a fine appreciation of what it costs to be democratic, of some of the social legislation which had been promoted by us social workers, who in our self-sufficiency have been incapable of thinking or too hurried to think in terms of the whole, and which now is being found to be inoperative; inoperative, not necessarily because the basis for the legislation was unsound, but because time had not been given to the task of educating the public, itself, to realize the need of change and of redress. The process must be slower, Mr. Burns said. One measure at a time must be taken and must be followed up to see what is the result of its enforcement. One must have patience and, one might add, faith, to bear the tedium of slowly accumulating results. One must find the point of contact. In trying to find the point of contact, one must be ready to submit to misunderstanding and to make compromises.

To find the point of contact in the home, itself, and in finding the contact there to lose one's sense of being an expert in one's consciousness of being a fellow human being, is the democratic task that lies before us. In making that contact on the basis of mutual understanding, one may come quite naturally to realize what are the simple, fundamental values of home life, and may with patience and farsightedness work for the right relation between school and home, a relationship that may lead us along some path of finer action than the path of mere substitution. To me it seems that that is the pathway we must begin now to tread, we social workers who have been treading the dusty highway of social reform.

In thinking of the enacting of life in the home itself, I was much struck recently by a portfolio of photographs of paintings of Eugène Carrière. "We must consent to life," Frank Jewett Mather⁴ says was Carrière's "favorite aphorism," and one that "conveys the spirit of his philosophy." "He," Mather says, "had to do with an eternal principle of fealty to the race asserted in the face of physical and social conditions that make such loyalty doubly perilous and fraught with sacrifice." One of Carrière's two *Maternities* of the Luxembourg rests with me as an image of that something which cannot be held by the race except through the medium of the family itself.

For the mother of his art as she leans to kiss the child, not the one on her knee, but the one standing at her side, wears not the mark of placid acceptance of her great lot, but the mark of sacrificial yearning to protect her child against the ravages of life. In the small, earnest face

⁴ *Estimates in Art*, pp. 185 and 193.

turned upwards to hers there is an awareness of the demands of love, which contains a promise of the perpetuity of family fidelity, into whose sharing the baby sleeping on its mother's knee and the third child, the one of an age in between the other two, who with back turned toddles across the floor, will be drawn when their consciousness of love's claim begins to wake.

That spontaneous outpouring of sacrificial love is the simple reality. Like all simple things, its profundity escapes us. The holding fast to the fundamental fact of the value of the family relationship, and holding fast to it for the sake of the children who will grow into manhood, is the need, to hark back to the beginning, that was emphasized for me in my visit to the Farm Colony. To rescue those lives would have meant to be able to turn back to the time when perhaps each individual member of that group had stood by the knee of someone who typified for him or her the age-old, fundamental claim of the home.

Four new values have, as Professor Tufts said in his address at the Baltimore meeting of the National Conference of Charities and Correction, to be reckoned with in any present consideration of the ethics of the family; "the value of woman's freedom and development, the value of the child, the value of sex and especially of motherhood, and lastly, the value of sound stock well reared for national life and for the life of the world." I do not believe that in our departments of household administration and of sociology, and in our schools of philanthropy, these values will be ignored in the next quarter century. There may, however, be danger, a danger which Professor Tufts, himself, never could run, of working for a recognition of these several values without an appreciation of what after all the family situation as a whole is or should become. If these values are conceived of as being detached from a total value, which is the family itself, an emphasis laid upon them may bring a result which will tend to undermine family life itself.

The end of the family, Professor Tufts says in the same address, is mutual aid. The healthful method that the family itself can employ is the method of coöperation. What lay implicit in that embrace of mother and child in the picture by Carrière was the promise of coöperation. The one was bound to the other not primarily, as one felt, in order that there might be a sense of possession nor an assertion of rights, but in order that there might be begun the continuing process of mutual aid.

In the home, itself, there is an unpremeditated coming together in order that the business of conducting life may be furthered with mutual advantage; in the home the lesson of how difficult it is to combine, can be learned without conscious tuition; in the home it can be realized, without the effort to put one's mind to the task, how essential it is that one be a coöperator. There, too, one may gather wisdom to grasp the fact that organization of itself does not push our world forward. We move forward not through the logical application of our theories, but through the play of our minds on situations. This play of the minds on actual situations is what stands out for me as our present special need.

The home is continually failing to make good. Our institutions are filled with the victims of its failure, our philanthropic societies are bearing the burden of reconstructing broken homes, our newspapers record daily instances of the failure of the well-to-do home to maintain its integrity.

Though deeply conscious of these failures, I am also conscious of the elements which make for success in the conduct of a home. The splendid preparation for studying results and for teaching method I long to see more and more definitely brought into relation to the home itself. As a result of practical application within the home, there will come a modification of method. The deepening experience will bring new sap from the root into the widely spreading branches.

Our homes are not in peril of extinction, they are rooted in life itself. But our homes do need to be steadied and to be enriched by suffering a material change through drawing in greater measure on the resources of applied science.

The burden of what I have said is: The material values of the home must be seen in relation to the spiritual values. The home itself must be used as the testing ground of our efforts. The principle of coöperation must be nourished in and extended through the home. The home itself must win out, through its own power to absorb the lessons that the school wishes and is ready to teach.

M. Edmond Demolins, a distinguished disciple of Le Play, in an address before the London School of Sociology and Social Economics, delivered in November 1905, said in closing that his only ambition in respect to social science was to meet two, three, or four persons who would take up the study of social science seriously and thoroughly, "not for an hour but for their whole life." In thinking of the great oppor-

tunity that has been given to me, a social worker in the field of case work, to speak before you, this ambition of M. Demolins has become more and more my own. The ambition is to see some one or more lovers of their fellows, lovers who have had the rich training of your department, lose themselves in the home life of some few of their fellow citizens, lose themselves in order that they may come back to you with a clearer vision of what the home itself is appropriating, what it is refusing to appropriate, and what it needs to appropriate of the vast store of opportunity which science and the arts are laying on its threshold.

Such a study will be a quest. "Kabir says: 'It is the spirit of the quest which helps.' " May such a student be "the slave of this spirit of the quest."

THE BOSTON STUDENTS' UNION¹

MRS. KATHARINE OSBORNE

Director

The great problem of housing women in large cities is distinctly emphasized in Boston on the student side, when we consider that out of fifty academic and professional schools one only cares for its students in an adequate or organized way. With the supposed student population of twenty thousand, the housing problem becomes one of serious importance to those who feel their responsibility to the student population of our great cities. I was told in Munich that Boston was the largest lodging house city in the world. Block after block of rooming houses offer their cold exteriors, with no suggestion of a "home table," such as we find in nearly every foreign city, and many of our own; so the prospective lodger is forced to seek her food in the cheap restaurant, with many deteriorating conditions surrounding her.

¹ Presented at the meeting of the Institution Economics Section of the American Home Economics Association, Lake Placid, 1915.

It was to meet this menacing condition that a group of thoughtful women in Boston founded the "Boston Students' Union" six years ago with the hope and intention of gathering together in the student quarter the unprotected and inadequately cared for students and offering them protection, inspiration, and the necessities of life under sympathetic and attractive conditions. The experiment has been a success from the first because it met an acute need in a human way.

The Club plant consists of two houses, built for homes, giving at the start the suggestion of home rather than institution. There have been added to these a number of small bedrooms and a large dining room, which have, however, never disturbed the distinctly homelike and personal atmosphere, which has been stamped upon the life of the Club by all most interested.

The Club offers, for a membership fee of one dollar per year, board and room for a limited number at a minimum price, reliable addresses for lodging, the use of the Club House for all personal and social needs, such as callers, teas, and parties and the use of the kitchenette, where a supper may be prepared and served to friends in a parlor, which may be secured in advance; the use of the study, rest room, books, newspapers, and piano; tea free every afternoon from four to five, general information regarding opportunities in Boston; vocational assistance in the procuring of part time work, which was asked for by about one-fifth of the membership last year. Many other opportunities are offered the membership in distinctly personal ways, but one of the most necessary and far-reaching requirements is met by the offer of board by the week or separate meals, served under the most comfortable and attractive conditions at a minimum price. Once the doors were opened and the vital needs of the student met, it was only a matter of operating efficiency and personal qualifications on the part of the administration to gather into this group a growing number of eager students, who were anxious to be shielded from the cheapness of the broad highway, with its hideous discomfort and allurements.

The first year the Club had a membership of 195 and served 43,334 meals in nine months. This year there is a membership of 465 and 201,961 meals were served in nine months. The Students' Union is run entirely for the interests of the student body. It aims to be a clearing house for all requirements, both felt and unrecognized, of the students. It is hoped that here, perhaps, more than in dormitory life, the student by the very force of the freedom to which she is exposed

from without will see more clearly the necessity for higher personal standards, not being a requirement of a curriculum but a demand made by the acknowledgment of dangers without and the deeply felt impetus from within the Club. The Club is not a charity, because it pays its own bills, but, as Miss Arnold says, "We subsidize it, because we give more than the student can ever pay for."

The question of proper lodging being of the first importance, the Club at once turned its attention to the neighboring rooming houses, most available for its members. Later, were gathered together into The Boston Coöperating Room Registry for Students, the rooming house registries in various quarters of the city which formerly worked quite independently and without any very active end in view. The registries of the Woman's Educational and Industrial Union, the Young Women's Christian Association, and the South End House, although not supplying a large number of students' rooms, are now coöperatively associated and make the rooming business more desirable and profitable.

The coöperation of the lodging house owner was first brought about by inviting groups of the women to the Students' Union for tea and the friendly discussion of the neighborhood and the welfare of "the girl away from home." As the appeal had to be entirely personal, it seems most remarkable that we have, in so short a time, five hundred and fifty lodging house women represented, who in greater or less degree are really interested in improving conditions. Meetings are held every two months at which speakers present questions vital to the lodging house problems. Discussions follow and a genial friendliness exists, which is bound to bear fruit in the form of more stringent requirements being laid upon the lodging house keeper. In our own registry, which is only for students, our women are not allowed to take men lodgers, and many similar requirements are asked in a leaflet which we circulate among the students and the lodging house keepers. A community gathered around one university may distinctly regulate its own home keepers, but a great cosmopolitan city, catering to a great floating population will find its problems most difficult to solve when an attempt is made to regulate many social conditions. The long first step has been effectively and firmly taken by the Students' Union in this direction, and now efforts are always being put forth to strengthen old successes and add new ones.

We have in the membership of the Club students from nearly every state in the Union and from four foreign countries, who are students at

thirty-five schools or colleges situated within a fifteen minute walk of the Club. Many of these students come from small New England, far Western, or Southern towns, who believe unfailingly in their own great ability to meet the world with absolutely no knowledge of life in a great city. Many come to us from the station, bag in hand, without the slightest notion where they will eat or sleep or what it will cost. The schools assume no moral responsibility for the students, finding it financially impossible to do so.

We find the schools willing to coöperate with us in many regulations, formerly not required, regarding the conditions under which the students shall live, but there is still a great lack of initiative on the part of the schools. The Club, as you will see, fills that great need for which it was created—to serve the students' need; to keep the standard of living among students high; to fill in as much of the life outside of the class room as possible with the inspiration for better things, always within reach; to guard the girl on all possible sides, and to give her that personal friendliness, which is often the greatest factor in solving the problems of youth.

The Boston Student's Union differs from other Clubs and homes for students in Boston, where a limited number live in residence, in that its membership is generally made up of those living outside the house (there are twenty six in residence) who find in the Club House and equipment the answer to many of their unsolved problems, together with advice and sympathy, which many times the crowded class room and the overworked instructor cannot give.

The Club would like to extend an invitation to you all to visit us when ever it may be possible and let us demonstrate our activities that you may judge of its value.

It has been quite impossible to give more than the barest outline of the scope and accomplishment of this almost unknown activity. Many people in Boston do not know we exist, whereas, in sharp contrast, a girl came to the Club one morning directly from the train, having driven twenty miles to the railroad from a little town in the state of Washington, but some way she had heard all about us before leaving home.

It is, after all, the great human social aspect of the problem of youth which we all have to meet. How well we meet it depends upon our vision and efficiency.

HOME ECONOMICS IN THE DETROIT SCHOOLS¹

CHARLOTTE KEEN

Bishop School, Detroit, Mich.

On December 4, 1899 the first classes in Home Economics were formed in the Detroit Public Schools. The work spread from year to year until now every girl in the public school system receives instruction. Beginning in the elementary schools it was gradually introduced in the secondary schools. Since then Junior High and Trade Schools have been established. It will be in this order that this paper will treat of the courses.

In the elementary classes the 4th, 5th and 8th grades receive domestic art,—hand sewing for the younger girls and simple dressmaking for the 8th grade. Domestic science is taught in the 6th and 7th grades.

In the hand sewing the little girls hem a towel and make a bag in which to carry their materials and later their cooking uniforms. They also learn the kinds and uses of cloth, measurements, how to make a common seam, two widths of hems, and various stitches, including even and uneven basting, machine stitch, over casting, hemming, etching, chain stitch and over handing.

In the A4th grade a table napkin and a simple kitchen apron are made, introducing the French seam, French hemming, gathering, sewing on band, making button holes and sewing on buttons.

In the B5th grade hemmed patching, simple weaving and the darning of stockings form the early lessons in the term; a flannel or cotton skirt forms the major portion. In this are found the flannel or felled seam and the hemmed placket, with a review of the activities of the previous term.

In the A5th grade the cooking uniform including apron, sleeves, towel, and holder is made. This is mainly review, with more advanced work in planning the garments, allowing for shrinkage and cutting.

Stocking darning and patching are emphasized in each term.

Supplementary articles and Christmas sewing furnish additional exercises for the faster workers. The book for reference is *School Needlework* by Olive C. Hapgood.

¹ Presented at the meeting of the American Home Economics Association, Detroit, February 25, 1916.

In the 8th grade dressmaking is taught. As many girls leave school at the close of their eighth grade, the aim is to familiarize them with sewing machines and the use of commercial patterns. A kimono-apron, middy blouse, plain skirt or gymnasium suit constitutes the course.

Shelter and Clothing by Kinne and Cooley is the reference book.

The aim of domestic science in the grades is to teach dexterity in the handling of utensils and manipulation of food stuffs. Emphasis is placed upon plain cooking with sufficient review. Simple experiments with carbon dioxide, water, starch, albumen, gluten, baking powder, and yeast are performed.

Individual equipments have been put into about one half of the present kitchens; in the others the "group of two" method is employed. The equipment is for 24 or 32. The girl herself learns to divide or multiply the recipes given so that her knowledge may be applied after leaving the class. Special effort is made to make the work as much like home processes as possible and many simple breakfasts, luncheons, dinners and teas are given. There are various schemes for the serving. A simple breakfast may be planned. The week before, the entire class discusses how much of each article each girl will require; then each two girls plan their work so that no time will be lost, and the following week each one can set busily to work with no directions from the instructor. In this way they learn to prepare several dishes at once and have them finished at the proper time. Two napkins are brought from home, one to be used as a table cloth, the other for its usual purpose. Each girl sets her place at her own table, and serves the meal as if at the regular dining table at home. The meal is prepared, served and cleared away with every thing left in order in the $1\frac{1}{2}$ hours allotted to the lesson.

Another plan is to divide the class into halves or thirds or smaller groups. Menus are planned by one group to serve another group; the best one, according to combination and price, is selected, and a chef elected. This chef has the entire ordering and planning for her group. At some future lesson group 1 is served as the preparing of the meal passes in rotation from one division to another.

Another method is a little more elaborate, when a few from the class are selected to be served, or some guest, probably their principal or teacher, is invited. The entire class works upon this problem at the

same time and plans a meal not to exceed 25 cents per plate. Usually four or six are served.

A plan to have late morning classes prepare teachers' luncheons, the teachers defraying the expense, has been successfully carried out in several schools.

Domestic science centers have been established in a large number of schools to save the children time and long walks.

Visitors are always welcome and, in every way, especially by having visiting days for the individual classes, we encourage the mothers to visit the classes and see the work of their own children.

A recipe book, compiled by the domestic science teachers in the Detroit public schools is given to each girl. These books are not for sale.

The regular course in domestic science is flexible to the extent that the individuality of the teacher may be called into play to meet the needs and conditions in her section of the city. The allowance per pupil per lesson is two cents. Although home work is encouraged, credit at school is not given for it.

The rooms are decorated with the government food charts, food exhibits, and suitable pictures. The Board of Education supplies a few reference books.

In the supervisor's office are many more books and exhibits of as many food materials and sewing materials as can be obtained and many of these exhibits are duplicated in the centers.

Annual or semi-annual excursions are made to the bakeries, creameries and markets.

Besides simple lessons in housewifery, and the lessons in cooking, four lessons in laundering are incorporated in the course.

In most of the grade schools one period of 90 minutes per week is given to domestic science, but, in some, two or more 90 minute periods are devoted to this work besides the Junior High Schools.

SECONDARY SCHOOLS

In the secondary schools the purpose of the course in domestic art is both aesthetic and economic. Time is given to the study of the various textiles in relation to production, manufacture and cost, and taste and judgment are developed in the selection and use of materials. The pupils are encouraged to cultivate sufficient constructive skill in the

The girls like it very much. They keep their cooking uniforms in order and for their woolen lessons borrow the boys' jerseys from the shop classes.

In the 7th and 8th grades the domestic science includes cookery, general sanitation, sewing, laundering, housewifery and marketing, with simple accounts, classes being conducted to the local market.

The 9th grade work is similar to the work given in the secondary schools,—cookery, home nursing and emergencies, home management and household chemistry. Meals are served to the teachers, several girls from the noon classes planning and cooking them and in this way becoming used to handling large amounts.

At the Norvell Junior High School a cottage is located in one corner of the play ground. This was an old store which has had the inside partitions torn out and the rear changed to the front so that it faces the school in place of the street. It is being rebuilt by the boys who have built a fireplace and are doing the wiring and building the furniture. Floor plans were designed by the boys, looked over and, after some changes, approved by the girls.

In the design room colors, papers, and finishings were studied and planned. Classes were taken down town where they examined rugs and furniture from the simplest to the most expensive.

The girls in the domestic science classes have a complete list of selected kitchen furnishings, chosen for durability and price.

Complete lists of all articles needed are on file.

This cottage is not a model but will constitute a permanent work for years, a new color scheme being employed each year, although the main furnishings will be the same.

The 9th grade girls will use this cottage for their work in home management.

In the Condon School there is built a suite of rooms, dining room and bed room, to be used as a practice house. The boys are making some very fine furniture—one piece being a copy of the colonial bed at Dixie Land, in gum wood. They are also making a lamp for the dining room.

THE BURTON TRADE SCHOOL

The Burton Trade School consists of special preparatory and trade classes. In the trade classes elementary training in plain sewing is given until the girl can sew sufficiently well to go into dressmaking.

In the dressmaking she makes a cotton model for herself, the simplest, plainest kind of dress. In this she makes her own alterations, learning in this way the lines of the body. When complete it is put on a princess form and padded like her figure. She then picks out a commercial pattern, pins it according to notches and tries it on over the model. This insures training in fitting from the first; the pattern is then marked the way it fits her model. The teacher shows her how to spread the pattern on the material according to the grain of the goods and how to join all parts together. The dress is then tried on the girl for a fitting, the teacher fits it and shows the girl how to make the necessary alterations. The outline is as follows: measuring, cutting, fitting, finishing 4 lingerie waists, 2 shirt waists, 4 cotton dresses, 2 silk waists, 2 simple cloth dresses, afternoon dress, evening dress, coat and skirt, evening coat or equivalent.

This was conducted as a customs department but as the girls did not have time to do extra work on account of sewing for their sisters, mothers, and other relatives that part has been somewhat curtailed.

Miss Cleveland in the Superintendent's annual report says:

The dress making has improved steadily, both in the amount accomplished and in quality. A course is sensibly planned, beginning with the simplest articles and working up to very elaborate gowns. Many of the girls enter the class not knowing how to use a thimble or scissors, and the quickness with which they learn is very creditable to the teachers, who make the utmost use of the girls' desire for pretty gowns and of their pride in making them successfully.

Besides the work the girl does herself, she has a valuable opportunity in observing the number and variety of the dresses made by the class as a whole. This year the pupils have made more than 1000 dresses for themselves and 52 for customers, though the dresses are but a small part of the whole work done.

One of the finest features of this class is the unusually good social spirit. Clubs have been organized with committees for keeping up the attendance, for looking after the rooms, and for entertainment. The pupils are of all ages over fourteen and come from all parts of the city. Girls who have had advantages and can afford expensive material seem to take pleasure in assisting those who are poorer.

The principal difficulty in making the work run smoothly has been in securing equipment and material as quickly as in business houses. In spite of this, I feel that the girls are getting a business training such as few schools can give. Perhaps the most distinctive feature of the training, however, is the remarkable feeling for style and color which is Miss Conlon's unique

gift, and which she is able to convey to her assistants and to many of the pupils. The assistants are chosen for their experience with the finest dress-makers in the city, and have so far been able to keep up to date in the class work.

The pupils of this class have had no difficulty in getting positions even before completing the course.

The girls in the trade classes are intensely interested and help each other. A little club they have formed in their English work helps to promote and improve friendly class feeling. This is conducted according to parliamentary law.

They have a small amount in their treasury and they use this to buy bobbins, findings or materials for poorer girls. Just before Christmas they bought the material and made over 100 garments for the Florence Crittenton Home. They took two days time and made sheets, pillow slips, and baby garments. With the small pieces left quilts were made.

Continuation classes are composed of cash girls from the leading dry goods houses, telephone operators, and cigar factory girls. These classes are not compulsory but a large number of girls take advantage of them. The classes meet every day but each girl attends only once a week. From 8 a.m. they have classes at the Cass Technical in salesmanship and arithmetic until they go over to the Burton from 11 to 12 for a cooking class. They prepare a hot dish which will supplement the lunch brought from home.

SCHOOL LUNCHES

In the high schools the school lunches are run independently of the domestic science department except in the North Western where it is in charge of the domestic science teacher assisted by a few students and the necessary outside help. There are a number of elementary and junior high schools in which the preparing of noon lunches is a part of the domestic science work. Aside from the teachers' lunches the Burton, Goldberg and Lincoln schools provide lunches for large numbers of pupils managed somewhat differently in each case. In the Norvell School the boys are now working on an equipment for a lunch room.

The sheet of statistics given below contains a compact résumé of the work in Detroit. The data explain themselves. The trade classes and continuation classes have been omitted in these statistics.

Summary of Home Economics Work in Detroit Public Schools

SCHOOL	GRADE OR COURSE	TIME PER WEEK IN MINUTES	NO. OF LESSONS PER WEEK	KIND OF WORK	COMPULSORY	NUMBER OF PUPILS	NUMBER OF TEACHERS	NO. OF SCHOOLS OR CENTERS
Elementary Schools.	4th	60	1	Sewing	yes	8314	17	101
	5th	60	1	Sewing	yes			
	6th	90	1	Cooking	yes	5731	22	45
	7th	90	1	Cooking	yes			
	8th	90	1	Dressmaking	yes	599		
Junior High Schools.	Industrial course	600	10	Dressmaking, Millinery, Cooking	yes	677	14	5
	Academic courses	160	2	Dressmaking, Millinery, Cooking	yes	375		1
	Commercial course	160	2	Dressmaking, Millinery, Cooking	yes	150		1
High Schools.	9th	180-315	2-4	Dressmaking, Millinery, Cooking	One year	1384	11	5
	10th	180-315	2-4	Dressmaking, Millinery, Cooking				
	11th	180-315	2-4	Dressmaking, Millinery, Cooking				
	12th	180-315	2-4	Dressmaking, Millinery, Cooking				

THE WAR AND DIETETICS

RUTH WHEELER

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With most people, dietetics is not a science. It is a habit. It takes a world war, an effective blockade, to make even a thrifty people investigate seriously the nutritive properties of what we indolently blanket as food "refuse." German scientists are, with the help of the government, doing something toward changing the dietary habits of their compatriots and perhaps stimulating the rest of the world to openmindedness in considering dietetic possibilities in animal and vegetable products now wasted. No doubt, with the forehandedness usual to that remarkably efficient nation, their chemists and physiologists are well in advance of actual dietary practices, but, at any rate, even if the results have not yet been tried out practically, the studies of substitute foods appearing in the chemical and medical journals are decidedly interesting. Changes in dietary habits are accompanied or preceded by careful studies of nutritive values. Every effort is made not only to prevent waste but to add to knowledge of foods and of food values.

The *Zeitschrift der Spiritusindustrie*¹ reviews the uses of potatoes; the kaiserliches *Gesundheitsamt*² studies the characteristics and the food value of bread made from rye with 20 per cent potato products added; the *Chemische Zeitung*³ reports (somewhat indefinitely) that substances may be added to potato flour which will make it sufficiently glutinous to hold the carbon dioxid and give a light loaf; 5 per cent of the grain flour of bread may be replaced by sucrose or invert sugar.⁴ Sugar beets⁵ heated with sodium carbonate and acidified are made eatable by men or by stock. A microorganism has been found⁶ which converts cellulose, even filter paper, and inorganic salts [(NH₄)₂SO₄, MgSO₄, K₂HPO₄, NaCl] into reducing and non-reducing carbohydrates, volatile fatty acids, iodine-binding substances and soluble proteins. The organism resembles aspergillus; it is widely distributed in the feces of man

¹ The importance of potato meal as food. Lanz, *Zt. Spiritusind.*, 38, 199.

² On the use of potato products in breadmaking. *Arb. kais. Gesund.* 48, 595.

³ Baking without grain flour. Fornet, *Chem. Zig.* 39, 388.

⁴ Sucrose and invert sugar as partial substitutes for flour in bread making. Jelinek, *Zt. Zuckerind. Böhmen*, 39, 281.

⁵ The use of sugar beets for human food and for fodder. Herzfeld and Fox, *Deut. Zuckerind.* 39, 885.

⁶ On the question of cellulose digestion. Ellenberger, *Zt. physiol. Chem.*, 96, 236.

and other animals, in organs of ruminants, pigs and horses, in earth, straw, and cheese.

After reading this, one is not surprised to find a nutritive study of straw⁷ which is said to be digested almost without residue by the horse and the pig. The straw is heated with 2 to 4 per cent sodium hydroxide, the soluble portion washed away, and the rest mixed with 20 per cent molasses and 6.6 per cent "digested crude protein." The mixture is eaten gladly and gives an increase in body weight, a positive calcium balance, and a considerable (erheblich) retention of nitrogen. One kilogram straw plus 20 per cent of molasses gives as much energy as 2.5 kg. hay or 0.92 kg. oats.

Blood may be used in bread,⁸ increasing decidedly the food value of the product. The blood is kept on ice 24 to 35 hours, filtered, and the serum added to the dough together with hydrogen peroxide. The oxygen freed by the peroxidase in the serum bleaches and raises the dough, thus obviating any unpleasant color and at the same time avoiding the loss in food value that accompanies the decomposition of carbohydrate by yeast.

Two interesting studies of the aging of bread may be inspired by the desire to avoid any waste or may be altogether unconnected with present dietary and economic conditions. Conclusions from the first⁹ are that light has no influence on staleness, and that aldehydes hinder its development, while ketones have no such power; from the second,¹⁰ that the question is largely one of loss of water in the colloidal system starch-water, and that aging is hindered by anything that increases the liquefaction of the starch.

A good deal of work has been done on the digestibility of war bread—70 per cent wheat flour, 30 per cent rye.¹¹ It is so coarse that unless well chewed it gives diarrhea. Hyperacidity and tympanites are also likely to result from its use but the former can be corrected by baking soda (NaHCO_3) and the latter by charcoal tablets, according to the investigator cited. Röhmman¹² holds that soldiers' black bread is preferable to white bread; it is good for the teeth and cheaper; it makes

⁷ The nutritive value of straw. v. Heide et al., *Bioch. Zt.*, 73, 161.

⁸ Concealing the use of blood in bread. Droste, *Chem. Zig.*, 39, 634.

⁹ Influence on the development of staleness in bread. Katz, *Zt. physiol. Chem.*, 96, 288 and 314.

¹⁰ Changes in bread on aging. Neumann, *Zt. ges. Getreiden.*, 6, 119.

¹¹ War literature. v. Noorden, *Ber. kl. Woch.*, 53, 141.

¹² Concerning the value of whole grain bread. Röhmman, *Ber. kl. Woch.*, 53, 105.

possible the use of German grown rye in the place of foreign wheat. He quotes experiments in which dogs and mice have died on white bread but have lived on this plus the hulls of the grains or on soldiers' black bread. The difference he claims is due not to essential accessories in the cortex but to amino acids present there and absent from the endosperm. The use of fine sieves in milling results in the loss of 20 per cent of dry substance and of 45 per cent of the protein of the whole grain.

The use of yeast in bread has for years been much criticized in Germany because of the loss of food value involved in its use, but now it is found to be a valuable food in itself. One strain has been cultivated that is rich in fat: 17 per cent instead of the 4 per cent in ordinary yeast; another strain is rich in protein: 54 per cent of the dry plant.¹³ Of this latter, 1 mark will buy 904 calories as compared with 623 calories of beef for the same money. The plant grows with great rapidity, 28 grams dry yeast (100 grams of pressed yeast) forming 88 grams dry substance in two days when grown in peptone and sugar. This it was that inspired the astounding newspaper stories of an organism discovered in the trenches that would change sugar into fat and something equivalent to meat. The yeast is described as a bright brown powder of indifferent taste and caramel-like odor. It is made into two sorts of tablets, one of yeast and salt only, to be eaten dry, and the other mixed with potato flour to be combined with hot water making a palatable and nourishing soup. Schottelius fed it to his own family and to prisoners with favorable results, and von Noorden and others have confirmed his work.

Determann¹⁴ in Freiburg has published A Critical Study of Vegetarian and Meat-poor Diets which is critically reviewed in the *Deutsches Archiv für klinische Medizin*. The diet is recommended in a number of diseases—gout, diabetes arterio-sclerosis, ophthalmic goitre, and others, for most of which the suggestion is surprising.

A great deal of information concerning dietary conditions and dietary problems in Germany is contained in a study of school luncheons in Berlin.¹⁵ The number of luncheons served each month has increased since the war began from 150,000 to over 500,000 and the price, to those

¹³ Investigations of food yeast. Schottelius, *Deut. med. Woch.*, 41, no. 28. See also *Pure Products* 11, 459, 486, 564, and Bokorny, *Pf. Ar.*, 89, 473.

¹⁴ Review of the book in *Deut. Ar. f. kl. Med.*, 180, 335.

¹⁵ Studies of Berlin school luncheons. Fendler et al., *Ar. f. Hyg.*, 85, 1.

who could pay, from 10 to 15 Pf. partly because of increased cost of materials but partly also because a larger meal is now given. The plan is to give the child 40 to 50 per cent of the day's ration, that is, 23 grams protein, 14 to 24 grams fat, and 114-92 grams carbohydrate, but both fat and protein are hard to get. Legumes are scarce and yeast is the best source of nitrogen.

STUDENTS' CONTRIBUTIONS

SEEING MOLDS GROW

A SIMPLE EXPERIMENT THAT MAY BE TRIED IN THE HOUSEHOLD OR IN THE SCHOOL

MARTHA B. JUDD

Simmons College

This paper was suggested by Professor Buchanan's valuable article on Molds in the Home in a former issue of the JOURNAL.

We all know that molds appear and we are familiar with the fact that they seem to thrive best in dark damp places. What some of us want to know is how they get all over everything.

If one has a reading glass which magnifies three to five times, this interesting experiment may be tried.

Experiment: Cut two thicknesses of heavy brown wrapping paper to fit the bottom of a soup plate. Moisten the papers by dipping once in cold water. Keep them moist by adding one tablespoonful of water at a time under the edge of the paper. Place a piece of bread on the paper and set the dish on the kitchen table while preparing a meal; after an hour or so, cover it with another soup plate and put it in a dark cupboard. Look at it two or three times a day to be sure that it is kept moist. Soon a few little patches will appear, some with white fuzz, some dull green, and others brown, or even salmon colored. Wherever there is a spot a mold[?] spore has fallen and is beginning to grow. After twenty-four hours, or sometimes even after twelve hours, the spots will have changed much in extent, in height, and perhaps in color.

As soon as most of the surface of the bread is covered, break off a piece where the green mold is, and blow across it. A cloud of greenish dust will fly off. Touch the dust and it makes the fingers green. This same kind of mold often appears on the end of a lemon, for instance, and the powdery dust not only gets all over one lemon but passes from it to its neighbors by contact or by being blown through the air. It may have blown off a piece of molded lemon rind and floated in the air in the kitchen until it happened to fall on the piece of bread. This green dust corresponds to the seeds of other plants and like them grows, if it has moist food material.

The salmon colored and brown molds spread in much the same way as this green one.

It is easier to see the different parts of the mold plant in the white, fluffy mold. By looking at it closely with the reading glass one finds a multitude of white stalks and on the end of each white glistening stalk a round black ball or cap. By continued patient watching one may see each little rough ball spring open setting free a fine brownish dust that a breeze may easily carry a great distance, and each particle of which may grow into a new mold patch if it finds suitable lodging. This mold shows still another way that molds have of perpetuating their kind. It is not easy to observe this, but, by breaking the bread where the mold is thick and looking closely, one may see that each group of stalks grows out from a small runner lying along the surface of the bread. So long as food is available these runners grow out in every direction. Whenever stalks grow up, the plant anchors itself by thread-like portions which run down into the bread. It is these threads which suck up food for the mold to live on and give the moldy taste to the bread. A low power microscope will show this even more plainly.

It seems no wonder that molds which have "anchors" in the bread, runners on top, and millions of spores or seeds all maturing fast and ready to fly away on every wind that blows, can easily find lodgment and by their growth destroy leather, cloth, and wood as well as our food, and that one single mold spore may spoil many dollars' worth of our possessions.

FOR THE HOMEMAKER

A CONVENIENT KITCHEN

LOUISE STANLEY

University of Missouri

In most homes much time is wasted in the preparation of meals. One reason for this is that so few of our kitchens are planned conveniently, or with any real thought of the work which is to be done there.

The kitchen should be compact in order to eliminate extra steps. The equipment should be grouped on the basis of the different kinds of work to be carried out. There should be a place for everything and each utensil should be kept in its place. The place for each thing should be, as far as possible, the place at which it will normally be used. All of the equipment should be selected with the idea of requiring the least possible amount of care. Built-in furniture decreases care by eliminating floor space and leaving no place behind for the accumulation of dust and dirt. If the furniture cannot be extended to the floor, sufficient space should be left below to allow for easy cleaning. There should be no unnecessary angles, and all surfaces should be as impervious to grease as possible, while at the same time of such material that they can be cleaned easily with soap and water.

The kitchen illustrated was planned with these thoughts in mind. In construction it is perfectly simple. In use it has proved to be a great saver of time from the standpoint of the preparation of the meal, the serving of the meal, and the clearing up afterwards—always an important feature. The principal points which make for convenience in this particular case are listed below.

The work table is easily accessible to the refrigerator, sink, and stove. The utensils and supplies most frequently used are grouped just above and below it. The side of the work table near the refrigerator is sufficiently protected from the stove to make it available for work with pastry.

The pass window from the kitchen to the dining room opens on the wide shelf at one side of the stove. In this way the meal may be served

in one trip from the kitchen if everything is put in place before leaving the kitchen. Through this same window the soiled dishes may be returned to the kitchen.

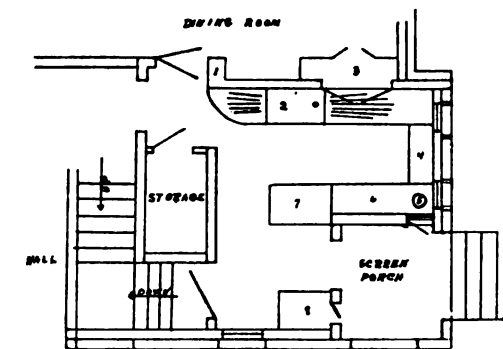
The arrangement of sink and drain boards is such that the dishes may be disposed of with the least possible amount of handling.

The built-in china press between the two rooms, placed just over the drainboard and the shelf referred to above, is a great convenience. In it the dishes may be placed after they are dried, and since they are reached

with equal ease from either room, they are then available from the dining room when needed for setting the table.

The cooking vessels are grouped around the sink or the stove according to the place where each will be first needed.

The refrigerator, while in the kitchen, is in a protected corner. It is arranged with an outside icer so that the ice man does not have to come into the kitchen, and can leave ice when the family is away.



1, Laundry chute from upstairs with opening in kitchen; 2, sink with drain either side—under the drain boards are cupboards to the floor; 3, china closet accessible from both sides; 4, shelf for kitchen stove; 5, garbage receptacle with door on porch; 6, built-in cabinet; 7, drop shelf; 8, ice box with outside icer.

In cold weather this door may be left open, keeping the refrigerator at the temperature of the outside air if that is desired. The refrigerator is raised from the floor to facilitate cleaning and the drain is connected with a pipe leading to an outside drain.

There is a minimum of floor space. Even the stove is built up on a solid base to avoid the dust trap which usually exists in the space underneath.

A TRIUMPH OF SCIENTIFIC HOUSEKEEPING

SARAH T. BARROWS

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Not the least important of the victories of the war is that won by the housewife over the dread foe, hunger. As I was in Germany during the first year of the war I had the best opportunities to test the genuineness of such a victory, and I can say truthfully that I had, during the entire year and in the five cities that I visited in that year, plenty of good, wholesome food, and that the cost of living for me was not appreciably raised. I will not say that we always had all of the things to eat that we had been accustomed to have before the war, nor that we always had just what we might have preferred. As soon, however, as some article of food became scarce, a substitute was found for it, so that its loss was hardly noticed.

As the Germans saw themselves more and more cut off from the outside world and realized that they must depend for food on the supplies that were already on hand, or that could be produced in the country itself, they resolutely set themselves to work upon the problem of the conservation of the food supply. Proclamations were issued by the authorities, warning the people to be economical in the use of food. Newspapers, day after day, reminded their readers of the critical situation. Attractive posters were printed to be hung up in every kitchen, calling the cook's attention especially to certain very necessary economies. The use of certain articles of food, such as flour and cereals, and afterward veal, cream, and other things was restricted by the government.

It was necessary, therefore, to make out the daily bills of fare on an entirely new basis, and this was the problem that the women had to solve and did solve with such admirable results. Careful menus were worked out, furnishing balanced rations, and using the food materials that were available. These were of different sorts, suitable for families of varying incomes. Of course, the families in better circumstances did not need these instructions so much, as their larder could contain a larger variety of foods, and they could afford to pay for experts in the preparation and combining of dishes; but for the poorer people, these suggestions were invaluable. Little booklets were issued explaining why economy was necessary, what food elements must be supplied to the

human body, and how these elements were to be found. Bills of fare for several days were given, with directions for cooking the food and estimates of the cost for a given number of people.

I have beside me a week's bill of fare, for four persons, allowing for two days without meat. Here is the menu for Sunday:

<i>Dinner</i>		<i>marks</i>
Oatmeal soup.....		.13
Veal a la mode, cauliflower, and potatoes		2.30
		2.43
<i>Supper</i>		
Fried potatoes.....		.38
Herring.....		.40
		.78

A recipe for each of these dishes is given, with exact amounts and cost of each ingredient. This is an unusually expensive day, as the Sunday dinner the world over is generally somewhat more elaborate than on week days. The average cost of the meals according to this week's menu is about 2 marks, or fifty cents a day. The following day's meals cost about thirty-five cents:

<i>Dinner</i>		<i>marks</i>
Vegetable soup.....		.35
Buttermilk pancakes.....		.45
		.80
<i>Supper</i>		
Potato salad.....		.37
Sausages.....		.40
		.77

In the little booklets that I have are recipes for cooking cheap cuts of meat, salt fish, various dishes to be used as substitutes for meat, cakes with rye and potato flour. The use of wheat flour for cake was forbidden by the government early in the war, but as there was an abundance of sugar on hand, the people were encouraged to eat sweets and to make cakes and puddings, substituting other kinds of flour. As there was a shortage of butter, the people were advised to make marmalades and fruit butters, and directions for making these at slight cost were given. I bought a glass of the fruit butter out of curiosity to see what

could be made at the rate of about ten cents a pound, and it was really very eatable. In the following recipe carrots are used in making orange marmalade, at a cost of less than four cents a pound: 5 pounds of carrots, 5 oranges, 5 pounds of sugar. I did not try this marmalade but I can well believe that a hungry child would find it very good.

Of course the article of food that really saved the day was the potato, grown in great quantities in Germany, and a great favorite with the German people. Potatoes to a great extent took the place of the bread, which could now be obtained only in small quantities. I was in Berlin when the bread tickets first went into operation the last winter of 1914-1915. The first tickets were of an experimental nature, and when it was found that the amount of bread allowed each person was more than the average person needed, the rations were decreased. As it worked out at first in Berlin, each person had what amounted to about seven slices of "war bread" a day. Later on, the supply was cut down so that it was only about five slices a day per person, though special arrangements were made to increase the allowance for day laborers or people who for some reason needed more bread. As far as my own personal experience goes, my housewife served such careful combinations of food that I never felt the need of more bread, and in fact seldom ate my entire share. The "war bread" is very nourishing indeed and one slice goes a long way. The following recipe for "war bread" is given in one of the *War Cook Books*:

2½ kg. rye flour	½ liter water
25 grams yeast	100 grams bread dough (sauer-teig)
1 kg. potatoes	salt
Caraway seeds	

A sponge is made the evening before by stirring together the dough, the yeast, the water and part of the rye flour. It is then covered and put into a warm place to rise over night.

The next morning the rest of the flour and the warm potatoes, which have been put through a ricer, are added, and the dough is kneaded about half an hour. Then two loaves are formed, which are covered and put away to rise until cracks appear on the surface. The bread is then put into the oven and baked one hour in a moderate oven.

In the first months of the war, rice and macaroni were used largely to help make up for the lack of bread, but as the circle was drawn closer and closer around Germany the importation of these articles almost

ceased and the people had to depend more and more on potatoes. The fact therefore that the dealers kept back the stores of potatoes in order to get higher prices for them has worked a terrible hardship, and the announcement that the government is to issue tickets for potatoes now will undoubtedly be greeted with general rejoicing. The incomprehensible thing is that it was not done long ago.

Possibly a concrete example of a day's meals as we had them last summer may be of interest. Breakfast consisted, as usual, of coffee and rolls. I chose to have the larger part of my allowance of bread for breakfast, and was given every morning three small rolls, made, according to prescription, of part rye and wheat flour, and baked the day before, for the government, soon after Christmas, put a stop to the fresh morning rolls that we who have lived on the continent have learned to expect. I was given plenty of butter and marmalade. For dinner we always had soup, followed by a roast or steak, with potatoes or rice and a fresh vegetable, and for dessert, a pudding of rice or potato flour, a fruit tart, or fresh fruit. For supper, eggs or cold meat with potatoes warmed over in some way, and either fruit or bread and cheese for dessert. As there was an abundance of everything on the table, it is easy to see that I was in no danger of being starved. For this I really paid less than in normal times, as there were then no tourists in Germany, and for the stranger the cost of living had not risen seriously.

The work for the conservation of food was done principally under the direction of the "Nationaler Frauendienst" or "Women's National Relief," with the help of chemists and dietitians. Public lectures and food demonstrations were given in all cities, and offices were maintained where cook books and menus could be obtained, as well as samples of the cakes, fruit butters, and other new kinds of food that were recommended. This office was also in some cases a kind of women's exchange, and was open at all times to women who were in need of advice on the subject of Home Economics.

Of course there are always people who complain of hardships, and who are more interested in their personal comfort than in the welfare of the public; but it was my observation that the most of the German women took a kind of pleasure in this battle with starvation, as they had the feeling that they too, as well as the men in the trenches, were doing their part in the defense of their country. And certain it is that without the efficient coöperation of the housekeepers the sacrifices of the men would have been of no avail.

IS THE GROCER OR THE CUSTOMER DISHONEST?

PERCIVAL FASSIG

We admit that there are honest and dishonest men in all walks of life, but it is questionable if any business man has more with which to contend, more favors to grant, or whether there is anyone of whom more advantage is taken than the grocer or the keeper of the "general store." It seems as if the people at large have the wrong conception of that line of business—no doubt they never give it consideration, but thoughtlessly ask favors of the grocer that they would not ask of anybody else.

Perhaps, after thinking the matter over a bit, you will say, "It's his own fault—why does he grant them?" And the very next instant, should you call up your grocer, you would feel offended if he refused to send you two dollars until, say, your husband returns. Competition is so keen and grocery stores are so plentiful that the grocer must, or thinks he must, accommodate everyone who pays his bills. Now it often happens that such loans are not returned for two, three, or more weeks. Would anyone think of going to a bank or to any other business man for such an accommodation without paying for it? Isn't the grocer entitled to some compensation in such cases?

We know that the furniture dealer often sends certain pieces of furniture on approval that are in fact used in entertaining and then returned; and that the dry-goods merchant furnishes many articles of wearing apparel that are returned after they have graced "milady" at a reception. In those cases the dealers at least receive their goods back; but the grocer must often give credit without the return of the goods.

A few illustrations will best show what advantage may be taken of a grocer by his customers. No doubt, there will be many who will look upon these instances with skepticism; but there will be many who will realize for the first time how unreasonable they have been. Women, as a rule, do not wish to take advantage of anyone. Still there are many who will not report an error when made in their favor, but will look upon the grocer as dishonest should he unconsciously make a mistake in his own favor. They will retain articles delivered to their homes through error and not pay for them. In most cases, the subject has not been presented to them in a forcible manner so that they can see their folly.

At today's prices and the cost of doing business, a groceryman must have a profit on each sale, if he desires to continue in business. And he must be honest with his customers, if he would retain them. In the long past, he could make up on one sale what he lost on another—but not today, although it is attempted by some.

Let us take the average woman ordering over the phone. How many women know how to place an order for what they actually want? It frequently happens that they order one thing when they want another; this is especially true in cuts of meat. No matter who is at fault in such cases, the article is returned and an immediate exchange demanded. Instead of going to the grocery or meat market once or twice and getting an idea of how to order or what the store carries, they feel that the grocer should assume all responsibility. This costs money and someone must pay for it. It also causes disappointments, chargeable, in nine cases out of every ten, to the woman ordering, though you can not make her believe it.

There are cases, and many of them, where meats have been neglected after delivery: left in the paper for a long time, or in a warm kitchen; or the cooking utensils were not properly cleaned; or inferior lard was used. In almost every such case the grocer is accused of sending spoiled meat and is requested to give credit. It is not infrequent that the meats were not used until the day following delivery, no attention having been given them during the interval. These are actual losses, not only of the article itself but of the time in delivering, for which the grocer is not responsible. Meats are perishable and should be given immediate attention upon delivery. They should be removed from the paper and placed in a cool, clean place.

Furthermore, the "return habit" has such a hold on some women that they seem to place orders simply to return the goods. A grocer had a small lot of specked apples which he sold to a woman at a greatly reduced price. No sooner were the apples delivered, than she called up and directed that they be sent for at once. The apples were not called for until the afternoon, and when the boy asked for them, the apples could not be found. "Why," said she, "the children have eaten them." No, she did not ask for credit; but she did not offer to pay for the time lost by the boy.

One old lady bought six bananas in the morning and placed them outside in the shade. It was in the fall of the year and during the night there was frost. The next morning the bananas turned black. Those

bananas were returned to the grocer and credit demanded. What could he do? Had he refused credit, he would not only have lost the customer but, as she owed an account, she would have deducted from the bill the amount charged for the bananas. Another woman bought a dozen oranges. Six days after she bought them she returned three and requested credit. It was granted.

These are not exceptional cases; they come up day after day, and add unnecessarily to the grocer's running expenses for which somebody must pay.

Another case comes to mind: A woman ordered a quart of oysters, and shortly after delivery she called up and requested the grocer to send for them as the oysters were spoiled. When the grocer told her "There must be some mistake, the oysters still on hand could not be better," she replied "They are too dark in color to be good." In other words, she knew absolutely nothing about oysters and did not want to learn.

Now and then you run across cases where women order and after delivery find that they can do without—the family has been invited out for a meal, a neighbor has sent in a gift offering, or father has brought in a few things from the farm. In such cases the grocer is called over the phone and requested to send for the goods. Or, perhaps the woman from the farm came in late and then the grocer hears over the phone "Mrs. Jones will not need the butter and eggs you delivered this morning; and won't you please call for them? Don't forget to give us credit."

Some years ago there was a flood scare and many families laid in supplies to last a week or more. One woman, who seldom did any baking, ordered a large sack of flour. As the flood did not interfere with the delivery of supplies, the flour was not used. A month later she requested the grocer to call for the flour as she could not use it. And that woman was the wife of an ex-grocer.

Undoubtedly, a grocer's greatest expense is that of delivery. The matter of having goods delivered has gone beyond all reason. Of course, it is the merchant's fault; in his anxiety for business he encourages this waste. A few years ago persons went to the store, selected what they wanted, and took the articles with them. Now orders are solicited and given over the telephone. Consequently, it is not uncommon for a woman at a distance to request the delivery of a single spool of thread, or a cake of yeast, or a bar of soap, or a loaf of bread, or a pint of milk. It is not infrequent that there is a boy or girl in the house at the time,

who could easily make the trip to the store for the article desired, but habit makes the customer call on the grocer to deliver the article.

Why, one must sell twelve spools of thread in order to receive a gross profit of ten cents. Do you realize what that means? It means that thread is handled as an accommodation by the "general store," and when it is delivered without other goods it is handled at a decided loss.

Now let us turn to another side of the grocer's trials—the most disheartening, because advantage is taken of him and he not only loses a customer but makes an enemy. Remember, that such cases are not infrequent. For one reason or another the wife opens an account without the knowledge of her husband, though he has given her money with which to pay as she goes.

In one case, the husband was building a row of flats and the wife told the grocer that until the flats were rented her husband would be short of money, but that she would keep the account down, paying some every two weeks. She did at first, then the intervals became longer. When finally the flats were rented and the grocery bill was rather large, she was asked for money. The wife pleaded not to take the matter to her husband as he had given her money with which to make her purchases. "Why did you let me run an account? You should have stopped me before it got so large." That was the thanks to the grocer for extending the favor.

In another case the husband had a good position, and the grocer permitted the wife to open an account. After the account had reached a point close to two hundred dollars (through the wife's promises and excuses), the husband and wife came into the store one evening and made a few purchases. The clerk asked if the purchases should be charged to their account. Whereupon, the husband became indignant and said he had no account. When he learned the truth there was a real scene in that store. The husband paid the account in time, but the grocer gained nothing; he lost the interest on the money and he lost the customers.

In many ways the best solution of the charge and delivery problem is that adopted by some of the western stores; i.e., to charge an additional 5 per cent for each account carried and another 5 per cent for each article delivered. This no doubt encourages cash payments and the carrying of purchases. Should not those who pay cash and save the grocer the cost of delivery receive the benefit?

A CONTRIBUTION TO EXACTNESS IN COOKERY

It is extremely important that the busy housewife, for whom cooking is but one of many interests, should accumulate a few recipes that are so exact that failure to attain a certain result is impossible.

In reality how few are the dishes that appear on the average table! The method of preparing them should be made not only exact but beyond the possibility of improvement when agreement has been reached as to the character of the dish desired and the money to be expended for it.

The following is submitted as suggestive of tests that might be applied to recipes for standard dishes.

It would be interesting to compare what has been found helpful in this direction by other housekeepers.

FOURTEEN QUESTIONS TO ASK CONCERNING A RECIPE

1. Approximate cost of ingredients, with date and locality.
2. List of ingredients given in the order used.
3. Method of cooking. Time of heat application, and temperature used.
4. Time required to mix and cook.
5. Amount resulting, by weight or measure.
6. How many persons served? State whether used as part of several courses or as the main dish of a simple meal.
7. Standards. How should the dish look and taste? Has it a distinct and agreeable flavor? How does it compare with the best commercial product?
8. Is it liked continuously in one or more families so that it becomes a "standby?"
9. The keeping qualities when properly cared for, as cake kept in a closed can, or a boiled ham at 50°F.
10. With what other foods should the dish be served?
11. Can the dish be cooked in advance and kept hot or reheated without loss of flavor? (Of importance in entertaining when one has limited service.)
12. How may the dish be spoiled, or of what must the cook beware? Illustration: quality of materials, measures, etc.
13. What substitutes may be made in materials if necessity requires

and what is the effect on the result? As in cake baking, water for milk, or sweet milk for sour, different nuts or flavors.

14. Suggestions for improvement in materials or method. Could a better dish filling the same purpose be made with the same time and money?

ILLUSTRATION: LEMON COOKIES

1. Cost of ingredients, 27 cents in December, 1915, Baltimore, Md.

2. Ingredients. $\frac{1}{2}$ pound or $\frac{1}{2}$ cup butter (less 1 tablespoon), $\frac{3}{4}$ cup fine granulated sugar, 1 large egg or two yolks, $1\frac{1}{2}$ cups flour plus 2 tablespoons sifted with 1 level teaspoon soda, grated rind of 1 lemon or $\frac{1}{2}$ orange and $\frac{1}{4}$ cup lemon juice, 1 tablespoon molasses, $\frac{1}{4}$ teaspoon salt if butter is unsalted. One raisin or nut meat on each cookie.

3. A hot oven, 350°F. to 400°F.

4. Time, nearly one hour: to save time cookies are dropped by teaspoonful, not rolled.

5. $1\frac{1}{2}$ pound, or 30-35 cookies.

6. 12 to 15 people, for dessert.

7. They should be crinkly or irregular of surface, of perfect light brown, coarse grained and tender. Of decided flavor—not of spice, but of fruit.

8. Yes.

9. Several weeks in tin box without hardening.

10. As dessert with fruit or with afternoon tea.

11. Yes.

12. By using coarse sugar, or too much butter, or too little flour; careless baking.

13. 2 yolks make cake more tender.

14. For result described, none.

EDITORIALS.

The Smith-Hughes Bill. The secretary of the National Society for the Promotion of Industrial Education sends out the following request under the date of August 11:

The Smith-Hughes Vocational Education Bill passed the Senate, July 31, by an unanimous vote.

This gives the Bill greatly increased standing and interest in the House. It can be finally passed in the House before Congress adjourns, if the friends of the measure will speak their desire with sufficient force at this time.

Will you once more write all your Congressmen (not Senators), asking them to do their best to get it passed at this session. Although there is not a quorum in the House just now, a call has been sent out and there will probably be one in a very short time.

A point which may well be made is this—The passing of the Child Labor Bill will pull out of industry more than 200,000 children. It is imperative that these children be given opportunities for vocational training so that they may become well equipped wage-earners when they reach the age which will permit them to re-enter industry. Add any other points you may wish.

Please help on this final pull by writing just a brief note to all your Congressmen. Get others to do so.

Here is an opportunity for a service to our country, the benefits of which can not be over estimated.

Will not all the readers of the JOURNAL respond immediately to this request? The American Home Economics Association has over and over again expressed its approval of this Bill, by resolutions and otherwise.

A Press Notice. It is not often that the daily press so well interprets the purpose of an association of the type of our own as is done in the following article that appeared in the *Chicago News* and other papers last month.

TAKING HOME MANAGEMENT SERIOUSLY

Eight years ago the American Home Economics Association was organized as an outgrowth of a special conference. Its president is a woman professor

at Cornell University; its three vice-presidents are of the Universities of Chicago, Wisconsin and Columbia, and its treasurer is of Harvard.

With such backing it is not surprising that the association is active in making studies and publishing the findings of its investigators.

The association has a helpful purpose—"to improve the conditions of living in the home, the institutional household and the community." In every day language, it tries to make home living better and to improve the management of hospitals, homes for old people, restaurants and hotels.

A monthly magazine is published by the association—the JOURNAL OF HOME ECONOMICS. In it appear thoughtful papers by members of the association and by other students of the subject.

It is what we have come to call a "high-brow" effort to solve a problem that is farthest from concerning most deeply the "high-brow" section of our population.

What the college professors can do is to start the rest of us thinking about the management of our own homes. What they can't do is to offer to you and to me the sure answer to our question "How can we live better on our income?"

To tackle home economics in any other way than by the "laboratory method" is to invite failure. The college experts knew this. They want to get down to facts in every case. They want data—masses of it, streams of it. They want to know what you and all your neighbors are doing and saying and thinking about this problem of home management.

How about co-operating with this American Home Economics Association? Why not find out whether it has anything of interest to you? Why not find out if you can help along its work?

The address of the president and secretary were given and already there have been a number of letters received in response.

ANNOUNCEMENT.

Miss Catherine MacKay, head of the department of Home Economics of the Iowa State College of Agriculture and Mechanics Arts has been chosen president of the American Home Economics Association for the coming year.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Principles of Health Control. FRANCIS M. WALTERS. New York: D. C. Heath and Company, 1916, pp. 476. \$1.50. By mail of the Journal \$1.61.

At last the era of "the new hygiene" has begun to affect school books and teaching. The plan of this book is an interesting one. It outlines very rapidly some of the essential conceptions of physiology, but passes on at once to the subject matter of hygiene. Many of its suggestions are invaluable. The use, by the student, of a "Health Record Outline" (somewhat after the fashion of a score card, but with no figures attached) is one of them; the discussion in connection with the "Daily Health Regime," another; the suggestions given as to the effect of different shapes of chairs and of shoe lasts upon body development, another.

Many of the suggestions given under "Health Work" are exceedingly practicable. Why should not the students in a hygiene class learn the value of urine analysis and blood pressure tests, of Hodge fly traps and of exercises for preventing constipation, by trying these things for themselves or on themselves, under the direction of an expert?

It is, of course, difficult to cover the large field of science and technology required by a treatise on hygiene—however brief—which undertakes to be really practical. Small wonder that misconceptions and inaccuracies occasionally appear. In the opinion of the reviewer, such are found, for instance, in the discussion as to the "need for those lacking in bodily vigor" . . . to "confine themselves to purin-free substances" (in the diet), in spite of the footnote which considerably modifies this statement. Yet, after all, the picking of flaws in a work marked by so many original and invaluable features, so successful in the undertaking of

presenting the subject of health control in the positive as well as in the negative phase, is but an ungrateful task.

MINNA DENTON.

Feterita. By J. C. SUMMERS. Oper. Miller, 20, 1915, No. 1, pp. 42-44, figs. 4.

Some baking tests are reported which were made upon dough prepared with feterita flour alone; upon others prepared with a mixture of 50 per cent of feterita flour and 50 per cent of soft wheat flour; and others with 50 per cent of feterita flour and 50 per cent of hard spring wheat flour as well as comparative baking tests with soft wheat alone and hard spring wheat flour alone.

The feterita, it is stated, is soft and breaks up badly in scouring and milling. The flour is of a dark red color and contains no gluten, which accounts for the poor volume of the loaves made from it. Bread made from feterita flour alone was heavy and had a poor texture as well as a poor color. The bread made from feterita and wheat was somewhat better in quality, but also somewhat heavy and poor in texture. Pancakes and gems made from feterita flour alone were heavy and had a flat taste. Gems and pancakes made from the feterita flour and wheat flour were of good quality and had only a slightly flat taste which was easily overcome by the use of sirup and spices.

Kansas Flours—Chemical, Baking, and Storage Tests. By C. O. SWANSON, J. T. WILLARD and L. A. FITZ. Kansas Sta. Bul. 202, 1915, pp. 135, figs. 21.

In the first part of this bulletin the equipment used and methods followed in baking tests are described in detail.

The second part of the publication gives the results of baking tests and chemical analyses.

The third part of the bulletin presents the results of a study of the chemical composition and baking qualities of 19 flours from a four-break mill, and 26 samples from a five-break mill.

In the fourth part of the publication is considered the effect of storage upon flour as determined by chemical analyses and baking tests. The work, which extended over several seasons, showed that, on storage, flours may lose 2 per cent of their original weight, the loss being mostly one of hygroscopic water. Chemical composition and baking qualities are otherwise very little affected by storage.

Proso and Kaoliang as Table Foods. South Dakota Sta. Bul. 158, 1915, No. 147-176, figs. 2.

General information is given by N. E. Hansen, regarding the history, cultivation, and milling of different varieties of these grains novel to the United States. The publication also contains the results of an investigation of their use as food by Nola K. Fromme. Proso is practically unused in America as a food, but in Russia and India it has been so used for some time. The grain may be used whole, ground into a meal, or finely ground into flour. Recipes and suggestions for its use in cookery are given. Information is also included regarding the use of kaoliang as food (it being compared with grain sorghums), and a number of recipes similar to those for corn meal or Kafir flour.

The Nutritive Value of the Avocado. By M. E. JAFFA. California Sta. Bul. 254, 1915, pp. 395-402, figs. 2.

This paper reports the results of the chemical analysis of 28 varieties of the avocado. The approximate percentage composition of the edible portion is as follows: water, 69; protein, 2; fat, 20; carbohydrate, 7; and ash, 1 per cent. The protein and ash

found were greater, the amount of carbohydrate about one-half that found in most fresh fruit, and the fat very much greater. The value of the avocado as food is due very largely to its high fat content, which is higher than that of the average olive. It is assumed by the author that the avocado is quite thoroughly digestible.

[Popular nutrition bulletins.] Bul. Univ. Tex., 1914, Nos. 333, pp. 29; 342, pp. 20; 344, pp. 12; 345, pp. 12; 347, pp. 19; 350, pp. 13; 366, pp. 20.

This series contains a number of popular bulletins among which are the following which would be of interest to housekeepers or to those engaged in extension work in Home Economics: *The Principles of Menu Making*, by Anna E. Richardson; *Food for Growing Children*; *Cooking Tough Meats*; and *The Uses of Foods and the Proper Balancing of the Diet*, by Jessie P. Rich; *Meat, Its Value as Food, and Its Proper Preparation*, prepared by the Division of Home Welfare, Department of Extension, University of Texas; *The Irish Potato*; and *Nuts and Their Uses as Food*, by Jessie P. Rich.

A Standard Dietary for an Orphanage. By ADELLE S. JAFFA. Sacramento, Cal.: State Printing Office, 1914, pp. 28.

This publication suggests so called standard dietaries for children from 8 to 12 years old, for alternate weeks in the month, as well as a few extra menus for variety.

Retail Prices, 1907 to December, 1914. U. S. Dept. Labor, Bur. Labor Statis. Bul. 156, 1915, pp. 397.

This bulletin, which is Publication No. 14 of the Retail Prices and Cost of Living series, consists of a compilation of statistical data regarding the relative prices of 15 articles of food in a number of different cities, for the years from 1907 to 1914, inclusive. Data are also given regarding bread weights and the prices of coal and gas for household use.

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Contributions to the bibliography are welcomed. Please send material to the JOURNAL.

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NEWS FROM THE FIELD

Luncheons at the Cornell Meeting.—The following reports have been received of some of the luncheons held at Cornell at the annual meeting of the Association. In addition to those reported there were held a Canadian luncheon, a Southern luncheon, and a Suffrage luncheon.

The Pratt Alumnae Luncheon at Cornell brought together twenty-one of the big family. Mrs. Anna C. Hedges Talbot was the guest of honor, as an ex-Director of the School of Household Arts. The two Pratt alumnae on the Cornell faculty, Miss Budseye and Miss Titsworth, arranged a very attractive luncheon, after it Miss Lord told the group about the recent alumnae supper of the School of Household Science and Arts, when the center of the celebration was Mrs. Delia Kearney, the faithful and beloved janitress of the school kitchens who has given twenty years of loyal service. There were songs for her, she was crowned with laurel, she was given the sacredly-guarded graduate pin, there were flowers, then a big book covered in the Pratt yellow, in which were the signatures of all who had contributed to the last gift—Trustees, faculty alumnae, students. This last gift was a little envelope containing four paid-up Thrift certificates—\$600, bearing 5½ if not touched for ten years.

As most of those at the luncheon had contributed to the gift, it was naturally the chief topic of interest but recent changes in the School were also discussed.

Teachers College Luncheon. Seventy-five alumni of Teachers College, Columbia University, had the opportunity to renew old acquaintanceships and form new ones at a luncheon arranged for them by Miss Mabel C. Little, now of Cornell

University, during the meeting of the American Home Economics Association at Ithaca in June.

Dr. Andrews presided and Mrs. Woolman was chief guest of honor, both being, as usual, the life of the occasion. Short speeches were made by each one present, telling of present positions and the work done since leaving college. All parts of the country seemed to be represented, and all types of work, from the experiments with ostrich eggs being conducted by Mrs. Jessamine Chapman Williams of the University of Arizona, to the studies of satisfactory low cost diets made by Miss Florence Nesbitt of the Juvenile Court of Chicago.

Miss Helen Louise Johnson told of the early days at Teachers College, many Columbia and Teachers College songs were sung, and the group finally adjourned after more than two hours of solid enjoyment, wishing that similar meetings might be held more frequently.

Drexel Institute was well represented at the meetings with about twenty graduates. Many of this group met at luncheon on Thursday.

In Connection with the National Educational Association in New York City, several meetings of interest to Household Arts teachers were held.

On Monday, July 3, the section of Vocational Education was addressed by: Mrs. John M. Glenn on "The Home as a Social Institution;" by Professor Bigelow, on "The Home in Relation to Health;" and by Mr. Henry Turner Bailey, on "Art Aspects of the Home."

On Tuesday, July 4, the American Home Economics Association presented a program including Miss Cleo Murt-

land, "Continuation Classes in Household Arts;" Dr. C. F. Langworthy, "Popular Teaching of Dietetics;" Miss Nellie Crooks, "Fabric Values;" Miss Ronzone, "Teaching Dress Reform through the Schools."

On Wednesday morning, the Manual Training and Domestic Art program of Vocational Education Section included papers by Professor Snedden, Miss Warner of Cornell, and Dr. Harvey on art in relation to the schools and the trades.

Wednesday afternoon, at Teachers College, Dr. Donald Armstrong spoke on, "Sanitation of Stores and Markets;" Mrs. Henrietta W. Calvin, on "Supervision of Home Economics Teaching;" and Miss Alice C. Boughton, on "A School Survey of Home Economics Teaching."

At the Fifty-Third Meeting of the American Chemical Society, to be held in New York City, the Division of Biological Chemistry will hold on Wednesday morning, September 27, a joint session with the Division of Physical and Inorganic Chemistry to discuss theoretical colloid chemistry. On Thursday morning, September 28, a joint session with the Division of Industrial Chemists and Chemical Engineers will be held to discuss the practical applications of colloid chemistry. On Friday and Saturday mornings, September 29 and 30, the Division of Biological Chemistry will meet for the presentation and discussion of the papers of its regular program.

Titles for papers should be sent to the Secretary of the division not later than September 9. Abstracts should be sent with each title.

The Santa Barbara Normal School of Manual and Household Arts begins its fall session with Frank H. Ball of Pittsburgh as its new president, thus losing its distinction as the only state normal school with a woman as its presiding officer.

Miss Ednah Rich resigned her position on June 30, and was married on July 1, to Mr. Lewis Kennedy Morse of Boston. The summer has been spent in an Alaskan trip, but the fall will welcome Mrs. Morse to her new home in Boston.

The American Home Economics Association is grateful for the valuable services of Miss Rich in the past, as a charter member of the Richards Memorial Fund board of trustees, as a member of its council, and in many other ways, hopes that in the future it may still command the interest and help of Mrs. Morse.

Brief Notes. The Home Economics Association, and the work in general has met with a great loss in the tragic death of Miss Eva Benepel, who was drowned in the Kaukakee River on July 31. After a year of efficient and enthusiastic work as the first woman county adviser in Illinois, she went to the meeting at Ithaca, to the N. E. A. in New York, and then to Washington, to get all the ideas and help possible for her new year's work. She seemed full of vigor and enthusiasm and of hopeful plans for the future.

It will be difficult to find a second county adviser for the work she opened so auspiciously.

Miss Ruth Wardall of the University of Iowa has leave of absence for a year's study at Yale with Dr. Mendel. Miss Catherine Creamer of Ohio State University is to give assistance at Iowa for the year.

Miss Alice L. Thomas, who has been Supervisor of Domestic Science at Long Beach, California, is to be at the University of Minnesota this coming year as an instructor in Foods and Cookery.

Miss Lucile Wheeler who has been at the University of Minnesota the past year teaching Dietetics goes to Illinois for the coming year, as Associate in food work.

THE Journal of Home Economics

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and Educational Work in Home Economics

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PUBLIC HEALTH IN THE PAST AND IN THE FUTURE¹

C. E. A. WINSLOW

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The development of the science and art of public health has been so rapid that it is very difficult for us to realize what a mystery shrouded the communicable disease up to a short half century ago.

There is a delightful portrait in Hovorka and Kronfeld's *Vergleichende Volksmedizin*, showing how protection against the cholera was secured in medieval times, which always stands to me as a worthy example of the helplessness of pre-scientific medicine.

In order to be fully armed to resist this dread disease a man must be equipped in the following manner: "About his body first a layer of India rubber, thereupon a large pitch plaster, on top of this a bandage of six yards of flannel. On the pit of his stomach a copper plate, on the chest a large bag of warm sand. Around the neck a double bandage filled with juniper berries and grains of pepper; in the ears two pieces of cotton wool with camphor; hung on the nose a smelling bottle containing vinegar, and in the mouth a twig of sweet calamus. Over the bandages a shirt, soaked in chlorid of lime, over that a cotton wool jacket and a hot brick, and, finally, a vest sprinkled with chlorid of lime. He must wear flannel stockings next the skin, underwear boiled in vinegar, and, on top of these, woolen stockings infiltrated with camphor. For shoes two copper vessels partly filled with hot water, and

¹ Presented at the Ninth Annual Meeting of the American Home Economics Association, Ithaca, N. Y., 1916.

overshoes on top. Attached to the calves of the legs are two flasks of water. He wears a large woolen overcoat sprinkled with chlorid of lime, then a mantle made of oilcloth and a hat of the same. In his right pocket he carries one pound of balm-mint tea, a half-pound of carlyme thistle and a half pound of sage. In his vest pocket he carries a bottle containing camomile oil and in his trousers pocket a bottle of camphor. On his hat he balances a tureen of thick gruel, in his right hand he carries a shrub of juniper, and in his left hand an acacia branch. Strapped to his body is a small wagon which he pulls after him and in which there are fifteen yards of flannel, a boiling kettle, ten scrubbing brushes, eighteen bricks, two hides and a comfort stool. He must wear a mask made of curly-mint paste and keep a quarter of a pound of calamus in his mouth."

There is a long gap between this fantastic witch doctor and the physicians and engineers who stamped out yellow fever at Havana and at Panama; but it is a gap which has been bridged only during the last half century.

Modern public health began with Sir Edwin Chadwick's report as Secretary of the Poor Law Commission on the Sanitary Condition of the Laboring Population of Great Britain, published in 1842. The appointment of the famous Health of Towns Commission followed in 1843 and the organization of a General Board of Health in 1848. An even greater figure in the history of public health is that of Sir John Simon, appointed Health Officer of London in 1848 and Central Medical Officer of Great Britain in 1855. His administration of the latter office was marked by an extraordinary development of English sanitary law. More important even than these legislative enactments was Simon's influence as a molder of public opinion. Yet in all this pioneer work of public health administration and education he had really no definite knowledge to draw upon, only an instinctive dread of filth as the possible mother of disease.

Our real knowledge of what particular kind of filth to fear we owe, of course, to Pasteur. In 1865 the greatest of Frenchmen, then in the midst of his researches on fermentation, had but just begun to surmise the relation between these humble problems and "the impenetrable mystery of life and death." In that year he was called on to investigate the terrible disease of silkworms which was ruining this important industry of southern France. He discovered the cause of this communicable disease of insects, as he had previously found the inciting agent of

diseased or abnormally fermented wines, to be a microbe; and it was this discovery which opened up the whole world of the "infinitely little" and founded the modern art of public health.

Koch and Lister and a score of lesser pioneers followed the trail blazed by Pasteur, so that during the ten years between 1880 and 1890 the germ theory was firmly established and the germs of a dozen specific diseases isolated and identified.

The problem of the next decade was the discovery of the modes of vehicles of disease, the pathways by which parasitic microbes pass from one human host to another. The danger from water supplies and milk supplies was made manifest by the work of the epidemiologists of the early nineties, the rôle played by insect carriers was revealed by Ross and Manson, by Bignami and Grassi, and by our own Reed and Carroll and Lazear and Agramonte and Gorgas in the latter years of the decade. It was only during the first years of the present century that the importance of personal contact, the third great mode of disease transmission, gained full recognition.

These discoveries at last laid a basis for definite and purposeful control of the external causes of disease, and the *Sanitation of the Environment* became the first task of public health. Chadwick and Simon were essentially correct in the instinct which inspired them to the cleaning up of gross masses of material filth, the introduction of sewerage systems, the disposal of sewage, the purification of water supplies, and the cleaning of the streets and yards in towns and villages. So when General Gorgas went to Panama the most pressing need was the sanitation of the surroundings. Pure water supplies must be introduced, sewers must be built, mosquito breeding marshes must be drained, as a primary essential in the public health campaign.

After a while, however, in any given community we find that these fundamental engineering tasks have been performed. The environment is made reasonably secure, and the great epidemics disappear that were once due to polluted water or to insect carriers of disease. Then the predominant problems of the health administrator take on a different nature. He finds that personal contact is coming to be the chief factor in disease transmission. People, rather than things, occupy his attention. He enters on the second phase of public health, the *Control of Community Infections*.

This type of public health work rested on the researches of the laboratory worker, and it is the bacteriologist rather than the sanitary

engineer who must carry it out in practice. Hand in hand with the discoveries which made it possible, by purifying foods, destroying insects, and limiting contact, to break the chain of disease transmission between one man and another, there has gone the development of the art of vaccine and serum therapy, by which even those germs which gain a foothold within the citadel of the body may be met and conquered. Beginning with Pasteur's demonstration of his vaccine for anthrax at the farm of Pouilly le Fort on May 5, 1881, this field of research gave us diphtheria and tetanus antitoxins, rabies and typhoid vaccines, meningitis serum and finally the serum for pneumonia.

The detection of early cases of disease, and of carriers, the isolation of the infected, so as to break the chain of contact between one individual and another, the production of artificial immunity against specific diseases by the use of sera and vaccines, these are the principal weapons of the sanitarian in fighting against these community infections, which rightly occupy a predominant place in the public health program of the present day.

Gradually however the spread of communicable disease by contact is being checked just as the epidemics due to wholesale water pollution or to filth-bred pests were eliminated by public sanitation. Already scarlet fever and typhoid fever and even diphtheria are falling to the place of relatively unimportant factors in the general death rate. The control of community infections and the sanitation of the environment must of course be kept up, but they become comparatively simple and automatic functions. The progressive public health official turns to the newer and greater possibilities revealed by the third phase of disease prevention—the *Hygienic Education of the Individual*.

If a judicious sanitarian were to plan an entirely new department of health, wholly unhampered by any organization inherited from the past, he would no doubt begin by a study of vital statistics. He would find out what people die of in largest numbers, and which of the principal causes of death are preventable and by what means. Then he would organize his department so that it could attack those diseases which promised the largest results in life saving.

Such an inquiry would show that there are seven causes of death which exceed all others in deadliness. In 1914, for example, there died in the Registration Area of the United States from heart disease, 99,534 persons; from tuberculosis, 96,903 persons; from pneumonia, 83,804 persons; from Bright's disease and nephritis, 67,545 persons; from cancer

and other malignant tumors, 52,420 persons; from diarrhea and enteritis, 52,407 persons, and from apoplexy, 51,272 persons.

These, as the largest single items in the death rate, are the natural targets of the sanitarian. There are few of them that are not, in a greater or less degree, amenable to proper measures of control; but such measures must involve popular education in individual hygiene rather than any wholesale administrative action. The causes of these quantitatively important maladies are to be sought for the most part not in the environment but within the body itself; and they can be controlled only by changing the daily habits of the individual.

The campaigns against tuberculosis and infant mortality are striking illustrations of the sort of prevention I have in mind. Environmental factors play an important part in the spread of tuberculosis; the general ventilation of factories and the elimination of mineral and metallic dusts are vital and today generally neglected fields of sanitation. The checking of contact infection by the control of the careless consumptive is also an essential part of the campaign against tuberculosis. The most important element in the antituberculosis campaign is, however, the detection of the incipient case and the securing, in sanatoria or at home, of a routine of daily hygienic living. This means popular education of the individual and provision for clinical examination, a wholly new type of public health work essentially different in its basic principles from the control of widespread community epidemics.

We pass from the physical environment to the community, and from the community to the individual, in our search for the subtler and more fundamental causes of disease. The campaign against infant mortality is another fully developed example of the new public health. Milk stations were in many instances founded, as the name implies, primarily for the distribution of pure milk. Today it is recognized that the success of an infant welfare station depends, not on the number of quarts of milk distributed, but on the number of mothers persuaded to nurse their own babies. The milk station has become a baby clinic, an educational center for the instruction of the individual mother in the details of infant care.

We are beginning at last to realize in practice the ideals set forth by Sir John Simon with remarkable prophetic vision, when he wrote in 1866:

Long before our modern codes of public sanitary law had begun to shape themselves, elaborate counsels of personal hygiene had become current in the

world; counsels, as to the ways and habits of life which would most conduce to healthful longevity; counsels, above all, for moderation in life—"the rule of not too much;" and those counsels for personal self-government, enforced from age to age by the evergrowing common experience of mankind, are not now to be deemed superfluous because boards of local government have arisen. In relation to their union, and to the many personal influences which are hereditary—in relation to eating and drinking—in relation to work and repose and recreation for mind and body—in relation to the charge of infancy, and to proper differences of regimen for the different after periods of life—there are hygienic rules, perhaps not less important to mankind than the rules which constitute local authorities.

There are general laws of personal hygiene which are more or less applicable to all normal individuals. Food, fresh air, exercise and rest, all in due moderation, are the pillars of the temple of health. Special rules are necessary however for those whose functions are deranged. There is what might be called a pathological hygiene as well as the normal hygiene. In order that the individuals who are on the border line of disease, the most promising cases for preventive care, may be detected, there must be more or less widely organized provision for *Medical Examination*, as important a factor as education in the public health of the future.

It requires medical examination to detect the incipient consumptive at the hopeful early stage. It requires medical examination to adjust the general principles of infant hygiene to the need of the individual baby; and in many directions the attention of public health workers is being directed toward the good to be accomplished by medical diagnosis and prompt preventive treatment of incipient disease.

Of the 100,000 deaths from heart disease which constitute the largest single item in the death rate it is estimated that over one-fifth are due to infections contracted in early life, for the most part by way of the teeth or the tonsils. Such infections are not preventable by measures of general sanitation or to a material extent by the measures of isolation and disinfection applied to ordinary communicable diseases. They are preventable, however, by medical examination to detect diseased teeth or tonsils, and by securing for each individual the appropriate dental or surgical care.

Cancer too must be included in the scope of the health department of the future. It is true that we have no satisfactory knowledge of the etiology of this growing scourge, and no medicine to check its course.

We have, however, in the prompt removal of the growth in its early stages, a weapon so simple and efficient that its use should be inculcated in a definite and organized fashion by all departments of health seriously bent on saving a maximum of lives. Once more you will note medical examination and the preventive care of the individual are the only means by which our knowledge can be effectively applied.

Let me ask you to recall what has taken place in the development of the medical inspection of school children and to consider whether it does not contain a lesson as to the relation between the medical profession and the adult citizen as well. School physicians were first appointed for one simple purpose, to detect cases of communicable disease, to protect one child from infection derived from another, a police health function of the older type. As soon as actual work began however it was evident to physicians and nurses that there were other evils much more common and in the aggregate more serious than communicable diseases. They began to find defective eyes and decayed teeth and enlarged tonsils. Today nine-tenths of the time of the medical school inspector is spent, not on protecting one child against another, but in the more paternalistic task of helping each child to attain his own maximum of physical health and efficiency.

It may be argued that this is not public health but private medicine; and it is quite certain that the tendencies of the day do indeed involve a profound readjustment of the relations between the medical profession and the public. Modern medicine has wonderful powers at its disposal. The important question is, where the energies of the physician can best be applied. It is to the interest of the patient that he should receive attention at the time when he can reap the largest results. It is to the interest of the physician that he should bring his knowledge to bear at the time when he can produce such results with the greatest certainty. This means medical attention before and not after the development of acute disease. It means prevention; and preventive care is much more difficult to secure by private initiative than by some form of communal organization.

I am not concerned at present with the precise machinery by which this readjustment is to be worked out. We see, however, that public health authorities are necessarily and inevitably reaching out for the most effective means of controlling the largest causes of death, and that these means include medical examination and general and individual education. The fundamental idea of applying medical knowledge as a

preventive rather than a cure is unquestionably a sound one; and as I notice the growth of school clinics, tuberculosis clinics, dental clinics, venereal clinics and infant welfare stations, I feel confident that somehow or other it will prevail. It is for us to see that the details of this development are so controlled as to protect the legitimate interests of the medical profession and to secure for the public the maximum of efficient service.

The achievements of public health in the past are among the most brilliant chapters in the history of the human race. The reduction in four diseases alone, tuberculosis, diphtheria, typhoid fever and diarrhea, in the last fifteen years, amounts to over 100,000 lives a year saved in the Registration Area of the United States. The reduction of 40 per cent in the general death rate of New York City in the last 20 years means that every 24 hours the greater city has 200 deathbeds instead of 330. When Dr. Hermann M. Biggs, who built up the great health department of New York City, became State Commissioner of New York in 1914, he took as his motto the words: "Public Health is Purchasable. Twenty-five Thousand lives can be Saved in New York State Within the Next Five Years." At the end of the first complete year of work of the reorganized department, Dr. Biggs could report the following results:

About 4000 lives were saved as compared with the average death rates occurring in the three-year period preceding 1913.

The general death rate was the lowest in the history of the State.

The infant death rate was the lowest in the history of the State.

The death rate from tuberculosis was the lowest in the history of the State.

The death rate from typhoid fever was the lowest in the history of the State.

The death rate from diphtheria was the lowest in the history of the State.

The death rate from measles was the lowest in the history of the State.

The death rate from scarlet fever was the lowest in the history of the State.

The death rate from whooping cough was the lowest in the history of the State.

It is indeed true that health is today very largely an attainable ideal; as we go on from the cleaning up of the physical environment, and the checking of community epidemics, to the control of the subtle beginnings of disease within the body of the individual, we shall find that even the achievements of the past and present are but the harbingers of a wider control of the forces of disease and death than that of which even the most hopeful of us now dare to dream.

MATHEMATICS APPLIED TO THE HOUSEHOLD ARTS¹

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A diligent search in mathematics textbooks that offer even the slightest promise of the application of mathematics to domestic arts reveals how little attempt has been made to discover the part that mathematics plays in what has come to be considered peculiarly "Woman's Sphere." This is not because the domestic arts do not offer an opportunity for the application of mathematics, but because of general social and educational conditions that have affected the kind of training given to girls.

During the past few years scattering problems on foods and dress-making have crept into some of the so-called practical arithmetics and algebras, but there has been little attempt to gather such problems together into a systematic course for girls.

That is what we have been trying to do in our course in household mathematics in the Plainfield High School. The aim of this course is twofold: first, to emphasize the economic aspect of household problems, and, second, to make the girls skillful in solving the problems of the home. These two aims have determined the character of the course, the order of topics, and the mathematical content. We have tried to select only problems similar to those that actually occur in the home.

These problems have been grouped, not according to their mathematical content, but according to subject matter, the order of topics depending to some extent upon the order of difficulty of the problems, to some extent upon the order of topics in the home arts course, and to some extent upon the maturity of the girls. Under our present arrangement the course is allowed 7 credits, of which 5 are given in the sophomore year and 2 in the senior year.

In the sophomore year the course begins with a study of the budget system as applied to household management. This lays a foundation for the economic aspect of all the later work. The girls learn what a budget represents, how to plan a family budget, and how to apply the theory to their own personal expenditures. They are taught to keep a petty cash account, to distribute the items of expenditure under the budget headings, and to see that they keep within the budget estimates.

¹ Presented at the meeting of the New York Section of the Association of Teachers of Mathematics in the Middle States and Maryland, February, 1916.

The budget divisions, in a sense, form an outline for the rest of the course. If we accept Bruère's choice of headings, the subjects taken up may be grouped as follows: food, shelter, clothing, operation, and advancement. At present we study food, clothing, and operation during the sophomore year, and shelter and advancement during the senior year. Whether or not this is a desirable arrangement is irrelevant to our present discussion.

The senior course offers little in the way of new problems, though it may be novel to consider them women's problems. The girls make an intensive study of methods of keeping household accounts, and they study investments, methods of purchasing homes, building and loan associations, mortgages, life insurance. They compare the expense of owning a home, such as loss of interest on investment, taxes, and depreciation, with rent of similar property. The maturity of the seniors makes it possible to study all these problems from a more or less personal point of view.

In the sophomore course the problems peculiar to domestic arts find their place. After the preliminary study of the budget system already mentioned, the first problems to be considered are those in operation, because they present fewest difficulties. These problems are concerned chiefly with matters of fuel for heat and light. The girls read the various kinds of meters in the school. They find out the difference in the number of feet of gas used per hour in a Welsbach and in an open burner; when it is cheaper to use a gas iron rather than an electric iron; the number of hours of use needed to make a gas iron pay for itself; they discover why one cannot afford to use ordinary carbon electric light bulbs instead of a Tungsten or Mazda. All these problems, though extremely simple as far as mathematics are concerned, have a legitimate place in the course because of their importance to the housekeeper.

Closely connected with operation is the matter of house furnishing and the buying of supplies. All the variety of problems in this group will readily occur to any housekeeper's mind: estimating the amount of material needed for floor coverings, wall paper, table and bed linen, curtains. We give the girls a little practice in drawing to scale, and teach them to draw floor plans and to interpret architects' drawings. The economic aspect of the problems is emphasized wherever possible, both in studying the relation that the value of furnishings should bear to the value of the house, and also in pointing out the significance of even a small saving through canny methods of purchase.

Kitchen soap purchased by the cake at 5 cents or in quantities at 4 cents means a possible saving of 25 per cent. If the same per cent of saving could be realized on all purchases, what would it amount to in an outlay of \$400?

The problems in house furnishings involve only denominate numbers, percentage, and mensuration of rectilinear figures and the circle. Measurement of the circle is involved in such a problem as this: How much lace is needed to edge a circular lunch cloth one yard in diameter?

In the next division of the budget—clothing—are included all problems concerned with estimating the amount of material needed for garments, the allowance for hems, tucks, straight and bias ruffles, with the cost. These problems involve only fractions, linear measure, and square root, but they sound sufficiently puzzling to an ordinary high school sophomore.

To illustrate: A tuck shortens the goods by double the width of the tuck. Problem: How many $\frac{1}{4}$ inch tucks are needed to shorten a skirt 3 inches? The skirt is to be 38 inches long, finished. How long must each breadth be cut to allow for a 3 inch hem and three $\frac{1}{4}$ inch tucks?

Again: A ruffle should measure one and one-half times the length of the goods to which it is attached. Problem: A child's petticoat measures $1\frac{1}{2}$ yards around the bottom, and is to be 16 inches long, finished with a 1 inch hem. How much material 30 inches wide is required? If it is trimmed with a ruffle 3 inches wide, finished, that has a $\frac{1}{2}$ inch hem and three $\frac{1}{16}$ inch tucks, how much will be needed for the ruffles? Will any extra material be needed for the band? At 35 cents a yard, how much will the petticoat cost?

Bias ruffles add a new difficulty. For the benefit of the men may I explain that a "true bias" is in reality the diagonal of a square whose side is the width of the goods. A bias strip is made by cutting parallel to the diagonal. The width of a bias strip is the perpendicular distance between the lines of cutting.

To estimate the length of a bias strip the dressmaker's rule is: multiply the width of the goods by $1\frac{1}{2}$ (approximately $\sqrt{2}$). In order to use this rule intelligently the girls learn how to find the square root of numbers, and how to make approximations.

Problem: Find the amount of material 20 inches wide, required for a 4 inch bias ruffle 26 inches long. How much material will be wasted if the end pieces cannot be used? How much material would be needed

for a straight ruffle? If the material costs \$1.15 a yard how much less will the straight ruffle cost?

When the subject of food is taken up, the problems become more complex, although the arithmetic involved is simple enough. The terminology has already been mastered in other courses; the girls know about the composition of food and its fuel value; they know what is meant by a "balanced ration." But before this knowledge can be of real service they need to have a great deal of practice in applying the principles of nutrition to the housewife's problem of planning correct dietaries readily and economically.

To apply the principles of nutrition necessitates the use of tables that give the composition and fuel value of foodstuffs. Of the tables that are available, those compiled by Atwater and published as a government bulletin are the most available as well as the cheapest. They give both the composition of foodstuffs in per cent, and also the total number of calories per pound.

To familiarize the girls with the use of these tables they are given problems like the following, and they are required to tabulate their results in a convenient form for future use.

1. Find the total number of calories and the number of calories of protein, fat, and carbohydrates in 1 cup of rice. One cup of rice equals 8 ounces. Rice contains 8 per cent protein. One ounce of protein yields 113 calories. The problem thus reduces to simple multiplication of the factors 8 ounces, 8 per cent and 113 calories. To find the number of calories of fat the method is the same, except that fat yields 255 calories to the ounce.

Problems in the comparison of foods are also given. E.g., How many ounces of sirloin steak will yield as many calories of protein as one egg?

In such problems, the algebraic equation simplifies the solution, letting x represent the number of ounces of steak needed.

It is evident that the use of these tables involves more computation than is practicable for the average housekeeper. The information given is not in a form that makes it readily available for her use. What the housekeeper needs to know is not the number of calories per pound, but per cup or ounce, not the chemical composition of foods in percentages, but the number of calories of protein, fat, and carbohydrates per cup or ounce.

There are two other tables especially useful to the housekeeper; the table compiled by Professor Irving Fisher and reprinted as a bulletin by the American School of Home Economics, and the table compiled by Carlotta Greer and published in her *Text Book of Cooking*. Both of these tables give the necessary information in a form that makes it readily available for the housekeeper's needs. Other admirable tables are those compiled by Locke, by Kinne and Cooley, and by Rose, but none of these tables seems to me so well adapted to use in the high school. While tables in which the gram is used as the unit involve simpler computations, they are not so practicable because the ounce and the cup are the housewife's measures. In a short high school course, it is useless to suppose that the girls can be taught to think in grams. Both Fisher and Carlotta Greer use the ounce as the unit, and both base their tables upon the 100 calorie portion. Instead of the per cent of composition as in Atwater or the weight of each of the digestible nutrients, both the Fisher and the Greer tables state the number of calories yielded by protein, while Fisher adds also the number of calories of fats and of carbohydrates. From either Fisher's or Greer's tables it is comparatively simple to compute the number of calories of any given foodstuff, and of a few standard recipes such as rice pudding, or white sauce. When the recipe is not found in the tables, its fuel value has to be computed from its respective ingredients, and then it is sometimes necessary to know how to use the Atwater tables.

Although the actual mathematical principles involved in these computations are simple enough, it requires a great deal of practice to enable the girls to use the tables with any degree of skill.

They have to learn how to obtain approximate results, for approximations are really of more use to the housekeeper than the scientifically accurate results of the laboratory. In every way we try to simplify the methods of computation and to eliminate all but the essentials. Two main requirements only are considered in regard to dietaries: first, a sufficient total number of calories, and second, the relatively correct number of protein calories, thus assuming that if the per cent of calories derived from protein in the dietary is correct, the per cent of fats and of carbohydrates can safely be left to adjust themselves. If the dietary needs correction because it is not balanced, the corrections are made entirely by trial.

The girls are expected to learn, both by practice and by actual memori-

zation, the fuel value of certain common foods, e.g., an egg, a slice of bread, a potato, a pat of butter; to know which foods can be used to increase or to decrease the per cent of protein in a dietary; to know a certain list of combinations of foods that are practically balanced, e.g., vegetable salads, bread and butter. They are encouraged to make rough estimates of the fuel value of foods, recipes, and dietaries, verifying their judgments by reference to the tables.

When the girls are sufficiently familiar with these fundamental principles and methods of dietetics, they have to consider also the economic aspect of the subject. Foods are then classified according to their cost per 100 calories at the current local prices. The girls plan dietaries at a given cost per day, and learn how to lower the cost of living by choosing foods from the list of those that cost "less than 1 cent per 100 calories." They find out which is the cheaper source of fuel at the current prices, eggs or steak, and they discover why tomatoes are a luxury as far as fuel value is concerned.

In all of this work we barely touch upon many of the important phases of dietetics. The ash constituent, the digestibility of food, the varying capacity of the different proteins for rebuilding tissue and sustaining life—all these, and many other complexities, have to be left for later and more intensive study in college. The aim of this part of the course has been achieved if the girls can use the tables readily, if they realize that it is not only desirable but practicable for a housewife to plan meals scientifically, and if they are able to put their knowledge to use in planning balanced dietaries that have sufficient nourishment and variety and yet are within a specified cost.

This work in foods completes the sophomore course. An attempt has been made, by taking up the five divisions of the budget in the sophomore and the senior years, to include all types of household problems that involve mathematics in their solution. This course is still in the experimental stage, but the value of such training for the girls in the home arts course has been clearly demonstrated.

COST OF FOODS FROM PRISON TO PALACE HOTEL¹

MRS. MELVIL DEWEY

Lake Placid Club

War conditions and the consequent scarcity of food in many countries, suggested the investigation to which this day's program is devoted. Not only the price but nutritive needs and hygienic results of feeding under various living conditions should be considered to make this study of value.

In seeking information on prison fare, appeals were made to the wardens of several leading prisons, but Mr. Thomas Mott Osborne was the only one to respond personally and he felt that his knowledge was too limited, as yet, to speak on this subject.

A bibliography of material consulted in the State Library at Albany, covering both American and English penal institutions, is appended.

PRISON FARE

It is now held that the criminal is not a creature of heredity so largely as of environment and that a most important developing factor in environment is diet. Nutrition unquestionably affects the disposition, character, and mental poise of the individual. The Borstal reformatory system now in use in England, is largely built upon this principle. The old theory which has so long prevailed, held that the object of feeding was simply to keep the prisoner alive and enable him to perform his daily tasks, but, if the prison is to be an institution of reform, the right kind and amount of food is an essential factor in his reformation. As a result of the old system there have been many disturbing elements in prison life, mental and psychologic crises due to the disturbed nervous condition of the inmates, and made more pronounced by the influence of improper diet. While the prisoner is not incarcerated for the purpose of being fed an ideal diet, nevertheless he should be fed a palatable and well balanced ration, calculated to insure good health and a stable nervous system.

The last investigation of our state institutions (Annual Report 1915, N. Y. Dept. of Efficiency and Economy) shows that the complaints made

¹ Presented at the meeting of the Institution Economics Section of the American Home Economics Association, Lake Placid, 1915.

of the meals furnished prisoners in all four of our state prisons, Auburn, Clinton, Great Meadow, and Sing Sing, the manner of service, lack of suitable equipment, monotony and poor quality of the cooking, were well founded.

The daily per capita for feeding men prisoners in New York State ranges from 11.29 cents at Auburn to 12.58 at Sing Sing. The average expense per prisoner per day for 3 meals in all our prisons is about 11.5 cents. Occasionally it drops way below this sum. Three meals at Sing Sing, June 5, 1914, cost $7\frac{1}{2}$ cents per capita, 4 other days, 6.95. The menu on the lowest day was: Breakfast: corn meal, milk, bread, coffee; Dinner: macaroni, bean soup, coffee, bread; supper: tea, bread.

In this dietary the milk is adulterated to 3 or 4 times its bulk with water, the coffee is nothing but a slop, no taste of coffee being discernible, and the general statement is that to drink it brings on indigestion. The tea is a strong preparation of tannin, strong enough to tan leather. The macaroni is steamed, not baked. There was nothing appetizing for the prisoners to eat at breakfast except bread; at dinner, bean soup and bread; at supper, only bread. The coffee is made as follows: $3\frac{1}{2}$ pounds of coffee to $1\frac{1}{2}$ pounds chicory to 200 gallons of water, price 14 cents a pound. This mixture is sufficient to serve 1400 men at a total cost of 56.7 cents a day. To make a good drink the keeper at Auburn figured it would require 30 pounds of coffee mixed in the proportion as now used with chicory and would cost the state \$3.40 instead of 56.7 cents as at present, and would increase the expense in all 4 prisons about \$5000 a year.

At Clinton prison 3 days in June averaged 6.9 to 9.04 cents per capita. Breakfast: oatmeal, with milk, bread, coffee; dinner: pork and beans, bread, coffee; supper: bread, coffee.

Meals at Auburn are said to be the best served in the prisons and there the milk was skimmed, not diluted 3 to 4 times.

It seems extraordinary that so little judgment is shown by prison officials in varying and improving the dietary. The same unappetizing stuff is served day after day and year after year, with no variety in food or manner of preparation. A large number of the prisoners have stomach troubles from this cause alone. Canned food is served when fresh vegetables would be just as cheap. The meat is cooked to death and is covered by a so-called sauce. The kitchen keepers are not to blame; it is the fault of the system.

The law provides that prisoners shall be served "wholesome, but in-

ferior food." It reads well in the published list of meals but in actual practice it is awful. At all prisons the beef bought is what is known as "clods." The breakfast is one of the horrors of prison life, oatmeal one day, hash the next, a very small amount of meat being used, or none at all, the hash being a combination of vegetables, unappetizing in appearance and taste, and is properly described as a "mess." Once a week it is baked and then the men eat and commend it. The supper always served throughout the State, is bread with tea or coffee which are both unspeakably bad. In only one prison was the bread distribution sanitary and decent, picked up on a fork and handed to the prisoner. In every other prison the inmates were allowed to paw the bread over and sometimes handle a number of pieces in making a selection. Repeated efforts have been made to secure baking ovens but without avail, and every one of the kitchen keepers has deplored the vile stuff served as tea and coffee. Only one prison has suitable arrangements for cooking food; that has a bake oven, but in all the others the food is cooked in steam kettles, whereby all the taste is cooked out of it and it is served in a watery condition.

When the character of the food served is taken into consideration, it is not surprising that our prisons do not reform and that work in the shops is not satisfactory. One prison, Great Meadow, has a large farm worked by the prisoners, and fresh vegetables are sometimes served them. The fact that a daily supply of fresh vegetables in summer is not served in all of our prisons is simply an indictment of the efficiency of prison administration both in Albany and at the several prisons. Examination of the various mess halls and kitchens shows that a complete change in the feeding of prisoners should be made. In addition the sanitary and hygienic conditions in some of these prisons is a disgrace to the state.

Prof. Charles R. Henderson in his report on Penal and Reformatory Institutions, 1910, outlines many necessary improvements and even suggests ideal conditions: first, a suitable room in which to serve meals, surroundings being important to power of digestion; dampness, darkness, gloom, impede and arrest it, while fresh air, light, comfort, and cheeriness aid digestion materially. The room should be simple, sanitary, decorated in light, soft shades, pleasing to the eye. There should be ample tables, and reasonably comfortable seats, so arranged that the men can be easily marched in and out. All meals should be eaten in mess halls; eating in cells should not be allowed. The food should

be well cooked, especially vegetables and cereals. Large brick ovens are desirable; too much food is steamed and it is not sufficiently varied. The food should be well served by trained waiters, neatly coated and aproned, preferably in white. White china should be used, not rusty tin and pewter as has been the custom from time immemorial. Prof. Henderson even goes so far as to suggest having bright orchestral music at one meal a day as an aid to digestion and adds that, except the music, Clinton prison has used most of these suggestions with advantage and no increase in actual cost of feeding.

The National Committee on Prisons and Prison Labor, through Miss Jaffray, Executive Secretary, and Wm. Golden, General Inspector, report some encouraging improvements in regard to feeding the inmates of the penal institutions in New York City. Beginning with June, 1914, the whole method of issuing, distributing, and cooking food was changed and a much more balanced diet was installed. The city institutions are now equipped for roasting meat and serving foods in other ways than boiled and steamed. They have also added to the dietary cereals and milk for breakfast. Baked beans, stewed fruit, macaroni and cheese, boiled rice for supper, which had not previously been used, have added variety to the diet and are much appreciated by the inmates.

The allowance for inmates of the city penal institutions is 16 cents per capita; for employes, 3 meals a day, 31 cents per capita. The object is to get the food to the individual in as palatable a form as possible and this can be accomplished only by having suitable cooking utensils and the number of cooks to handle, supervise, and distribute the food properly.

It is not generally considered important in penal institutions to have any well trained person in charge of this phase of the work, but competent and reliable help is more essential here than in any other part of the institution because food is one of the principal large expenditures, and should be handled with great care and efficiency. Usually in prisons there is one cook or chef who has entire charge of the work. His hours are from 4 in the morning to 4 in the afternoon. On his day off the work is done by an inmate, and the result can readily be imagined. Too much is now dependent on inmate help. There should always be a responsible and efficient person in the kitchen at all times which would mean at least two people to properly supervise the cooking and distribution of food supplies.

Miss Jaffray writes:

To my knowledge the dietary of the Department of Correction is the best in any prison. Dr. Emily Seaman of Teachers College is making a study of the prison diets of New York State with a view to recommending changes, but her work is still far from complete.

In regard to English reformatories and indeed to prison administration in England, it is in advance of this country but absolutely along the old lines of repression. Mr. Osborne was told when in England that we had to work out prison reform in this country before they would awaken to the need of it in England. All the details are well attended to; it is the underlying principle that is wrong.

The fact can no longer be ignored that food has an important bearing on disposition and character and in the production of certain physical and psychic phenomena. Malnutrition is not only a great cause in the production of criminals but may be a cause of their continuation in crime.

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THRIFT BY HOUSEHOLD ACCOUNTING

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In order to help toward thrift, household accounts should tell how money has been spent and how it could perhaps be spent to better advantage.

It is especially important to know certain things about the way money is being spent.

The amount being spent for housing the family is worth knowing, for usually not more than one-fifth of the income can be spent for this and leave enough for the other necessary expenses. A good house is worth having, but one should know how much of the family income is being spent for it.

It is also important to know how much is being used for housekeeping expenses, and how much is being invested in household furnishings.

Many families know how much they are spending for food, but if food costs are to be kept low and the family is still to be adequately fed, it is also worth while to know how much is being used for different types of food.

Much meat usually makes a high cost diet, and other foods can provide the necessary protein. Milk is a kind of protein food especially necessary for children and is also so valuable for grown people that it should always be freely used even when economy is being carefully considered. A total weekly expenditure for other protein foods than milk need not be large, however, in order to supply enough nourishment of this kind for the family.

Fruits and vegetables are necessary in the diet. If you have to economize, use the cheaper kinds, but do not leave them out of the diet or try to use them too little.

Flour, meal, macaroni, rice, and other cereals, bread, and crackers, are all so nutritious in comparison with cost, that a generous use of them usually makes a low cost diet.

Fat in the form of butter or olive oil is rather expensive, and fully as much nourishment is secured from the cheaper fats. Use some fat in the diet each day, but do not let this part of your food expenditure mount up too high if you are trying to economize.

Sugar and other sweet foods are inexpensive, but it is not a good plan to use them too freely, especially for children, because of their tendency to cause digestive disturbances.

Tea, coffee, and other beverages have practically no nutritive value, and, for the sake of economy if for no other reason, too much money should not be paid out for them.

All the expenses just considered are household expenses, and are for the benefit of the family as a whole. An expense for clothing, or for car fare, lunch, health, recreation, education, insurance, etc., is usually for the benefit of a certain member of the family, and in keeping accounts it is worth while to consider the amounts being used by and for the different members of the family, so that there may be always a wise and just division of the family income and no one member will unconsciously have more than a necessary share.

In addition to recording and studying expenses during the week, it is also worth while to compare the various totals of the week's expenses with the totals of expenses during other weeks.

It is also often advantageous to keep a record of savings so as to encourage their increase, and a record of debts so as to encourage their decrease.

DIRECTIONS FOR KEEPING ACCOUNTS

The account forms on pages 549-550 are planned for the keeping of accounts which will easily and quickly give the information just outlined as being desirable. First, is the summary page upon which is to be entered week by week the totals of the various expenditures. Next is a series of weekly record pages, and at the close of the book is a page for the statements of savings and debts.

1. At the beginning of each week write the date in the indicated

space at the top of the weekly cash record form. In the blank spaces at the top of the Personal Expense columns, write the names of the members of the family for whom it is desired to keep separate records. If there are not enough Personal Expense columns on the page as ruled, divide one or more across the middle to make additional separate spaces.

2. Write in the indicated space under the heading, Cash For Use, an exact statement of the amount of cash which you have on hand at the beginning of the week. When any cash is received during the week, enter it immediately in this column.

3. When any money is spent out, think for what purpose the expenditure was made, look over the headings of the various columns and write down in the proper space the date or the day when the expenditure was made, the amount and kind of the expenditure, and the price paid. For instance, if on Monday you purchased among other things 2 quarts of milk for \$0.18 and 1½ pounds of beef for \$0.24, the entry in your first food column would look like this:

Mon	2 qt. milk 1½ lb. beef	\$.18 .24
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The other columns would show similarly other expenditures of the day, and on the following days throughout the week all expenditures would be similarly entered in the appropriate columns.

4. If any money is added to or withdrawn from your savings funds, record it on the page at the back of the book.

If any debts are made or any are paid off, record this also.

5. At the end of the week add up the figures in the various columns, and enter the totals on the summary page at the beginning of the book, in a column dated the same as the weekly record sheet.

Add up the figures in this column, and enter the total in the space on the weekly record sheet headed Cash Used. Also enter here any amount paid on back debts and any amount saved for future use.

Add up the figures in the column Cash For Use and those just entered in the column Cash Used. Enter these totals in the last column to the right, and subtract the lower figure from the upper figure. This will give you a statement of the amount of cash which should be on hand at the end of the week. If the figure does not agree with the amount of cash actually on hand, there has been some mistake in the record. If the mistake cannot be found, write down the amount unaccounted

for. and begin the next week's account with a true statement of the amount of cash on hand.

6. Look over your record for the week, and ask yourself the following questions:—

Were all the expenditures advisable?

Did we always get a good return for our money?

How do this week's expenses compare with the expenses of other weeks?

Are we dividing our income wisely, or are we extravagant along certain lines?

HOW CAN WE PLAN IT TO SPEND OUR MONEY TO EVEN BETTER ADVANTAGE?

Keeping household accounts will not make you thrifty, unless you take advantage of the information which they will give you.

If you wish to learn more about planning your budget, or about spending your money thriftily, ask a Home Economics teacher or a visiting housekeeper, or write to the Budget Committee or the Social Work Committee of the American Home Economics Association, Baltimore, Maryland.

A NEW PHASE OF EXTENSION WORK IN THE SOUTH

EDITH INGHAM

Dietitian and Manager of the State Dormitories, College of Industrial Arts, Denton, Texas

FLORIS CULVER

Extension Lecturer

A unique idea, as originated by and effected under the direction of the College of Industrial Arts, is the plan of instructing the boarding house keepers in the college community along the lines of food selection, preparation, serving, and care. The need of such a step was felt because, due to the rapid growth of the College, over one half the students cannot be accommodated in the dormitories and are forced to board at the homes near by. While some of the boarding house keepers served well balanced meals, there were others who have been known to serve such dinners as:

Baked Beans	Sausage	Cold Slaw	Sauer Kraut
String Beans	Black-eyed Peas	Salt Pork and Cabbage	
Bread	Butter	Bread	Butter
Mince Pie		Peach Cobbler	
—			
Potatoes	Rice		
Fried Mush and Syrup			
Coffee			

All things considered, it seemed hardly fair that the three hundred girls at the dormitory dining hall should have the advantage of being served meals planned by an expert dietitian, while between four and five hundred students were expected to do the same quality of work on a less certain diet.

Feeling that the housekeepers themselves would appreciate as well as profit by the coöperation of the College in regard to their daily problems of caring for the students, President Bralley issued to all of the women in the community, who had as boarders students attending the College of Industrial Arts, invitations to attend a short course of six lectures on important points in the maintenance of the culinary department of a large family. At the first lecture, all of the boarding house keepers were present. At the second lecture the number in attendance was nearly double that of the first day, for the townswomen who did not keep boarders wished to come also. As it is the policy of the College

to help whomsoever it can and to refuse aid to no one, the additional attendants were welcomed, although the needs of the boarding house keepers were the guiding thought behind each lecture. The audience increased daily.

The first lecture dealt with the sanitary aspects of the care of food and garbage. In the discussion of the significance of the germ theory in the home, the care of drains, traps, the refrigerator, and the riddance of household pests were emphasized. At the first lecture also, the composition of food and the principles of cookery were simply demonstrated. The lectures were planned for an hour, but, on account of the interesting discussion at the conclusion of each day's talk, it seemed impossible to close short of two hours.

The second lecture had to deal with the economical purchasing of food. The value of observing market quotations, what and when to buy in wholesale quantities, the number of servings to certain sized packages, and cost versus nutritive value of the different types of food were emphasized. A striking comparison of difference in cost in buying in large quantities and small packages was demonstrated. The following includes some of the suggestions made:

Buy:

Bacon, in 15 pound boxes.

Canned goods, by case. If possible place order for all canned goods at once, preferably the spring before to secure a better price. Use gallon cans if family justifies. Canned apples for pie, sauce, puddings, are cheap and easy to handle. Watch canned goods for full pack, quality, flavor, and syrup.

Cereals, by dozen boxes or more in cool weather. Crackers, by large wooden box.

Cocoa, by 10 pound boxes. Chocolate, by large sized cakes. Coffee, whole; keep covered and grind as necessary.

Condensed or dried milk for certain purposes and for emergency use.

Eggs, by case or half case whenever possible. They should be stored in March or April, when they are cheap, either in a cold storage plant or at home in salt or water glass.

Gelatine, flakes or sheet. Lima beans, dry.

Lemons, by one-half box if used in sufficient quantity.

Macaroni, spaghetti, by large wooden box saves handling boxes and saves money.

Potatoes, by sack if they will keep.

Broken nut meats, broken pineapple and some other fruits are much cheaper than whole and equal in flavor.

Raisins, the seedless muscatel or sultana by pound instead of the seeded varieties in paper cartons.

Salt, in large sacks. Spices, in large cans or by pound.

Sugar, by barrel or by several sacks when it is cheap. Watch wholesale prices in city papers. Syrup, by case.

Tomato puree for soups and sauces.

Wesson oil for salads in gallon cans and, if desired, get best olive oil in gallon cans and use together. Medium grades of olive oil are often combinations. It is cheaper and more satisfactory to make one's own combination.

The third lecture dealt with the comparative value of food, the place in the diet, and the proper relationship of the various types of foods. The essential points in the planning of a well balanced dietary were discussed and demonstrated. The average food requirements of the girls attending the College were simply explained and the best sources of energy giving, tissue building, and body regulating material were clearly brought out.

In connection with this lecture, menus for one week were handed the women. Two of last years' degree graduates of the College, from their interest in the problem, gave their time and thought to the preparation of the dietary sheets which bring out the fuel value of each dish and give also the protein per cent and total calories for each day.

At the fourth lecture, the reasonable rate of board and reasonable profit to expect were taken up. Stoddard Hall budget was used for illustration. The average income to expect from their investment was worked out with the boarding house keepers. Proper kitchen and dining room equipment and arrangement of such were discussed. A comparison was made of the different kinds of linen.

On the fifth day a meat cutting demonstration was given by the local butcher. The comparative cost, nutritive value and use of the various cuts were discussed. Methods of making tough meats tender, and of attractively utilizing leftover meats were demonstrated.

The last day was given over to questions and discussions. Light was thrown on problems hitherto perplexing to many of the audience.

During the week, the visitors had access to the College library on Home Economics. Not only did they read from good books on foods,

but they also availed themselves of the opportunity offered them to read up-to-date magazines on the subject.

Each day, at least one simple dish was served them. Recipes worked out in large amounts for families of ten to fifteen were handed out to the women.

Probably the most satisfactory part of the entire experiment was the spirit of hearty coöperation and keen appreciation evinced on the part of the boarding house keepers themselves. Not only did they show eager anxiety to get every point offered, but also added color to the discussion by giving useful information they had gleaned by their own experience.

The boarding house keepers themselves petitioned the President of the College to grant them the privilege of another course of lectures next year, with monthly round table discussions. They wish to regard the College as the center of help for problems to be solved and a medium of exchange of valuable ideas.

As a step to this end the plan for the food department of the new dormitory to be in use next year was explained, and a cordial invitation extended for visits at any time.

It is the earnest desire of the College that the assistance rendered the boarding house keepers will not only be of practical service to them, but will also, through the service of better cooked and balanced meals to the students, benefit the College in maintaining a high standard of scholarship.

THE COOKING NOTE BOOK

EMMA CONLEY

State Inspector of Home Economics, Madison, Wisconsin

It is not the writer's intention to open a discussion on the merits of the note book in connection with food work in Home Economics.

It may be that the time spent in keeping any note book could be used to better advantage. Textbooks, containing standard recipes are now numerous enough so that it is no longer necessary to waste time dictating arbitrary proportions of ingredients.

Most teachers realize, too, that the right way to teach Home Economics is by the experimental method rather than by "rule-of-thumb."

There should be some system whereby observation, deduction, and conclusion could be recorded, so that the principles underlying all cooking could be developed and formulated for application.

If this could be done it would be comparatively easy to group all recipes into a limited number of classes, simplify the methods of teaching the subject, and to cut down materially the number of lessons given over to mere manipulation.

The following outline is given because it has been tried in a number of schools in Wisconsin and the teachers who tried it reported that it led to a better understanding of the cooking work and to a very good grouping of recipes. It was found, for example, that, instead of copying a dozen or more recipes for pie or cookies, this one general summary made it possible for students to formulate any recipes, if the course was planned so that lessons were inter-related and the subject was presented in a logical manner.

The outline used is as follows:

1. Name of food
2. Method of preparation
 - a. Proportion of ingredients
 - b. Method of combination
 - c. Method of cooking
 - d. Temperature
 - e. Time
3. Results
 - a. Observation of each individual food product
 - b. Comparison of the class products
 - c. Reasons for variation in appearance, texture, quality
4. Variation of recipe
 - a. Variations which could be made for experimental purposes
 - b. Variations in manner of serving
5. Serving
 - a. Recipe, how served?
 - b. At what meal?
6. Nutritive value in calories
7. Cost
 - a. Cost of food prepared
 - b. Variation to decrease cost
8. New points learned in lesson

STUDENTS' CONTRIBUTIONS

A SOCIAL WELFARE STUDY

D. E. MITCHELL

The following paper is an account of the work done by a student in the Course for Social Welfare given in Teachers College, Columbia University. This course is merely suggestive, and is planned to give the students an opportunity to use their speciality of Home Economics along social activities. The family described is one maintaining a low standard of living, and the work done here had to begin with the first principles. When instruction was begun the monthly budget for the family was as follows:

<i>Income</i>	<i>Estimate</i>
\$34.66	Rent..... \$10.00
	Food..... 38.49
	Fuel, heat and light..... 3.25
	Clothing..... 14.00
	Insurance..... 0.86
	Sundries..... 2.00
	<u>\$68.60</u>

To provide the dietary children picked up cabbages that had fallen from the farmer's wagons, and the sauer kraut was made by the barrel. At the close of the student's work she had accomplished wonderful things in preparing the field for further work.

WINIFRED STUART GIBBS.

The family visited consists of Mr. and Mrs. S. and six children: Mr. S., a Hungarian, born in 1874, by name Joseph; the wife named Anna, a Hungarian, born in 1880, Anna, Mary and Steve, respectively fourteen, twelve, and ten; Joseph, Veronica, and Andrew; are three and a half, and one and a half years, and four months.

January, 1915. Joseph fell on the sidewalk last summer and broke four front teeth and so lives mostly on liquid food. The only source of income is the man's salary of eight dollars a week. The children pick up coal and wood from the tracks. When the truck trains were coming in the children got cabbages, apples, onions and other odd vegetables which were thrown out.

The family conditions in October were bad. The flat of three rooms was too small; it was dark, ill-ventilated, and very dirty. There was a sink in the kitchen with one faucet, and one toilet in the hall for four flats. Each room had a window but all except those in the front room looked out on a brick wall with a narrow court between, so that little light came into the rooms. There was one gas burner in each room. The floors were of rough unpainted wood. There was no cupboard in the flat but there were some shelves. The halls of the tenement were fairly clean but dark.

The first time we visited the flat it was as dirty and untidy as it could be. Mrs. S. was out so we could not get any information. The windows were all shut; dirty dishes and filthy rags lay everywhere together. At the second visit Mrs. S. was in bed with toothache and the place was as dirty as before. I was assured that they had only sauer kraut and coffee for their meals and that the whole family ate the same thing.

TENTATIVE PURPOSES AND PLAN

To persuade them to keep the window open a little all the time.

To teach them to be more orderly, cleaner, and to take better care of their food.

To teach Mrs. S. and Anna to cook such simple economical dishes as they can afford, with their inadequate income. To teach as far as possible such dishes as the whole family can eat. To try to prevent the babies having coffee.

To gradually substitute a better balanced diet for the children and babies. To give a week's menu, making use of things taught and already known.

To teach a system of regular meals to supplant the present irregular eating.

To teach the keeping of regular accounts.

To teach the division of income within *their* income.

To teach Mrs. S. to keep her house so that she will not require help.

To get Anna to the Trade School or to work where she would be trained to become an efficient earner.

NOTES ON WORK

- | | |
|--|---|
| <p>I. Questioned them as to their food habits. Told Mrs. S. to keep window open, clean house, give Veronica toast, not to give Joseph coffee, to use postum instead of coffee.</p> | <p><i>Practical Work</i>
Taught the making of toast, rendering fat, and making of postum.</p> |
| <p>II. Proportions of cereal and water; method and length of cooking; when to serve. Need not always put in raisins. Eat with milk. Cheap and good food. The syrup to be eaten on bread or fruit. Proportion of sugar and water. Length of time to boil. Cheaper and just as good as sugar. Told Mrs. S. not to eat so much sauer kraut and drink less coffee. To keep milk for the babies in a cool place, covered. To eat plenty of cereal and milk herself.</p> | <p>Oatmeal, cream of wheat with raisins. Syrup.</p> |

- III. Good way to do potatoes, little work, and no waste. }
 Good to have for supper with fat or cheese. Best } Baked potatoes.
 way for Joseph to have potatoes. Asked Anna to }
 keep account of all she bought.
- IV. Apples, bread and sugar. Good way to use the picked }
 up apples. Have it for supper with soup. Have some } Apple pudding, potato
 apples or raisins every day. Make Joseph eat properly } soup.
 and not have a bottle. Clean sink so it won't }
 smell. Throw away rubbish. Told Anna about the }
 Trade School.
- V. Chuck steak, onions, and carrots. Cook very slowly, }
 three hours. Went to P. School to see about Anna's } Meat stew, apple sauce.
 working papers and why Steve and Mary did not go }
 to school regularly.
- VI. Cheese as good a food as meat and doesn't cost so much. }
 Cook it slowly with bread and milk or rice and milk. } Cheese fondue, prunes.
 Eat it uncooked with bread or potato. Do not give it }
 to Veronica. Took Mrs. S. a good coat.

Family moved to new flat; rent \$8.50 a month instead of \$10.00.

January. 11. Found family with colds. Joseph and Veronica pale, cross, and fretful. Mr. S. out of work. He and Anna were both out looking for work. Have coal and wood which they had picked up. The new flat is lighter than the old but the middle room has no outside light or air. There is one toilet in the court for the whole tenement. The flat was very dirty and untidy. Left money for milk (1 quart) every day. Veronica to have no coffee. Joseph having it every day. Veronica having soup, noodles with fat, and whatever she wanted that was on hand. Made beef juice in a Mason jar. Washed the bottles and boiled them. Told Mrs. S. to give beef juice, milk, and crusts every day to Veronica, and that Joseph and Veronica were sick because of coffee and not enough milk. Left money for meat and milk.

January 15. Children no better. Showed Mrs. S. how to strain cereal for Veronica and how to soft cook an egg. Wrote menu of strained cream of wheat every day, beef juice one day, and egg and bread the next, plenty of milk and crusts every day. Veronica not to have anything else. House was tidied up and the babies washed. Had kept no slips of what was bought.

January 17. Veronica better. Joseph worse; was drinking coffee when I went in.

Took a lemon squeezer, oranges, eggs, rice, and cheese. Showed Anna and Mrs. S. how to prepare orange juice and told them to give it to Joseph and Veronica every day and to give Veronica an egg with a baked potato every day. Cooked a rice and cheese dish and gave advice as to how to use the codfish sent in.

I have found that I could teach only one thing at a time and that I had to repeat things over and over. Have made little or no headway but have been trying to get a foundation laid. The whole family is so undernourished that little can be done till they are in better condition. Anna and Mary are intelligent and could be trained. The money that they spent on food was laid out surprisingly well to get the most for it, as is shown by the week's account given below. The work is really only begun and as there has been only half the minimum requirements to spend on food it was hard to make headway.

The money was expended very well for the amount available. The diet lacks fruit and fat and the proportion of meat is high but I doubt if anyone could have done better.

Cash expenditures of family for one week in September

Milk, 17½ quarts.....	\$1.46
Bread, 7 loaves.....	.35
Cereals, 4 packages breakfast foods.....	.50
Rice.....	.08
Meat.....	.82
Potatoes.....	.18
Vegetables.....	.08
Sugar, 3½ lbs.....	.18
Eggs.....	.10
Coffee.....	.25
Lard.....	.05
Buttermilk.....	.08
	\$4.13
Lunches and carfare for man.....	1.20
Church.....	.10
Gas.....	.25
Soap.....	.10
Insurance.....	.25
	\$6.03

FOR THE HOMEMAKER

FAMILY ACCOUNT BOOKS

B. R. ANDREWS

*Chairman, Budget Committee, American Home Economics Association, Teachers College,
Columbia University*

The Budget Committee is undertaking the collection of accurate records of family expenditures at various levels of income, and to this end wishes to determine upon standard forms for recording expenses. Below there is given a list of some of the available account books and cards, and there is appended a suggested account form which seems desirable for use in families making cash expenditures and not using charge accounts. Practically this suggested form will probably be most useful in families on small incomes under \$1000-1200 a year, and as such it will be of especial interest to visiting housekeepers, charity societies, and others. This account form will be reprinted from the JOURNAL as an account book for twelve weeks expenditures with the title "Family Cash Expenditures—Week by Week." The committee hopes that teachers of Home Economics will secure the keeping of records by this booklet among families of small income and contribute the results to the Committee.

Another prime problem is the keeping of accounts in the family where there are charge accounts. The Budget Committee asks that suggestions of card record forms for middle class incomes from \$1200-2000 or more be sent in. By using the card record system for this type of family there will be a chance to compare the card and book methods in household book-keeping.

The purpose of collecting household budgets is to learn the economic habits of the American family. We wish to know these habits so that with the scientific knowledge available we can help society to a more efficient and rational expenditure of its income.

In order to analyze conditions, and to know how to increase the efficiency of family expenditure, we must know how money is being spent. The budgets collected must, as regards food costs for example, be accurate enough and detailed enough to serve as dietary studies. From the clothing budget we should know not only the amount spent by each member of the family for different types of clothing but also for the different clothing materials. There has been little said up to the present time about the universal bad economy in the use of clothing materials. The same accurate detail must hold true of other expenditures if we are really going to solve problems.

The best way to get this data is to keep accounts in such a classified way that they can easily serve as an accurate study. The first step in this direction is to furnish the house wife with some system by which she can keep accounts that will give the desired result, and that will not only furnish the student with adequate material from which to work but will furnish the house wife definite data by which she can criticise her own expenditure and make her budget for the following year. It will also stimulate business methods in ordering and buying. With this end in view the Budget Committee is working out systems for the keeping of household accounts.

Students are asked to plan to secure accurate records of expenditure in their parents' homes.

FAMILY CASH RECORD—WEEK BY WEEK

Members of The Social Work Committee of the American Home Economics Association have prepared the following form, which, as stated above, is suggested for use in families with cash expenditures only. Copies of it arranged for twelve weeks expenditures will shortly be available.

In this pamphlet the page will be larger and the forms spaced conveniently. They will be prefaced by the explanations given on page 534.

TOTAL WEEKLY EXPENSES	WEEK OF ---	WEEK OF ---	(ETC.)	TOTAL
HOUSE				
Rent				
Fuel, light, etc.				
Furnishings				
TOTAL				
FOOD				
Meat, fish, milk, etc.				
Fruit, vegetables				
Flour, bread, etc.				
Butter, etc.				
Sugar, etc.				
Tea, Coffee, etc.				
TOTAL				
PERSONAL				
TOTAL				
TOTAL EXPENSES				

CASH RECORD

HOUSE		FOOD			
Rent, or house payments, taxes, house repairs		Meat, fish, eggs, milk, cheese, nuts, lentils, dried beans and peas		Fruit and vegetables	
TOTAL		TOTAL		TOTAL	
Fuel, light, laundry and cleaning supplies, ice		Flour, meal, rice, macaroni, breakfast food cereals, bread, crackers		Butter, butterine, oil, lard, bacon, salt pork, etc.	
TOTAL		TOTAL		TOTAL	
House furnishings		Sugar, sirup, honey, molas- ses, candy, etc.		Tea, coffee, salt, spices, etc.	
TOTAL		TOTAL		TOTAL	

DURING WEEK BEGINNING _____

PERSONAL (clothing, carfare, lunch, health, recreation, education, insurance, etc.)

Name _____	Name _____	Name _____
TOTAL	TOTAL	TOTAL
Name _____	Name _____	Name _____
TOTAL	TOTAL	TOTAL

SUMMARY

CASH FOR USE	CASH USED	CASH LEFT OVER
On hand at beginning of week... \$ _____	Total weekly expenses \$ _____	Total cash for use \$ _____
Received from .. _____ _____ _____	Paid on back debts Saved.....	Total cash used..
TOTAL.....\$ _____	TOTAL.....\$ _____	Cash on hand at end of week... \$ _____

The Budget Committee presents the following list of available account books and card systems—and will appreciate information of other available books. It is desirable that a complete collection of available systems of household accounts be at hand for teaching purposes in higher schools and colleges and to that end the Committee has made lantern slides of some fifteen of the following account forms for teachers, which the Association will furnish at 40 cents each on orders sent to the Baltimore office. A preliminary classification of these account forms has been made according to whether the "table of classification" of items, e.g., food, clothing, etc., is across the top of the page or down the side of the page, as follows:

I. Table of Distribution Across the Top of Page:

1. One sheet per month; a line a day; space for item:
 - a. My Year's Expense, Geo. B. Woolson and Company, New York City.
 - b. Household Accounts, American School of Home Economics, Chicago.
 - c. Bradstreets' Practical Accounting for Home Expenses, P. W. Bradstreet and Company, Chicago.
 - d. Expense Account Book, Woman's Educational and Industrial Union, Boston.
 - e. Ward's P. and H. Expense Book, Samuel Ward Company, Boston.
 - f. The Economizer Household Account Book, O. A. Jeschien, Smith Bros., Oakland, Cal.
2. A line a day; space for item:
 - a. Students Accounts, Edith Fleming, Department Home Economics, Cornell University, Ithaca, N. Y.
 - b. Household Accounts, Edith Fleming, Department Home Economics, Cornell University, Ithaca, N. Y.
 - c. Form given in Haskin's How to Keep Household Accounts, Harper and Brothers.
 - d. Household Expenses, J. C. Moore Corporation, Rochester, N. Y. (a loose-leaf system).
 - e. Household Expenses, Winifred Stuart Gibbs, Association for Improving the Condition of the Poor, New York City (used in visiting instruction by visiting dietitians).

II. Table of Distribution at Side of Page:

1. One sheet per week; one column per day:
 - a. Household Expenses, Florence Nesbit, Juvenile Court, Chicago.
2. One sheet per month; one column per day:
 - a. The Manning Home Budget, Standard Publishing Company, Boston.
3. One column per week:
 - a. What Do I Spend? Metropolitan Life Insurance Company, New York City.
 - b. Mrs. Kirk's Handy Expense Card for Housekeepers, The Alice Gitchell Kirk Company, Cleveland, Ohio.
4. A sheet per year; one column per month:
 - a. Form given in Brookman's Family Expense Account, D. C. Heath and Company.
 - b. Statement of Cost of Living, University of California, Berkeley, Cal. (sheets for detailed estimates of costs rather than account forms).

HIRED MEN'S MEALS

EMILY ALLEN

Feeding the hired man is a problem confronting many a farm family. Be the hired man ever so pleasant it breaks into the family life to have a stranger in the house. The "better to do" farmers are more and more coming to hire only married men. They can let them have a house and lot as part of their wages. The farmer of more moderate means still has the problem of the hired man as a boarder. He should know just how much boarding the hired man costs else he will not know when it is cheaper to hire a man who can board himself and thus make the necessary arrangements for this.

Of course, on the farm, food is secured at a rate that might be considered equal to the price of food at wholesale. The hired man of average age is supposed to eat enough food to furnish him 3500 calories of fuel per day. Often he eats more than this and sometimes less. Hired men feel or express themselves as feeling that about all they get out of their job is wages and "feed." Naturally they demand all the wages they can command and the very best of food if they can get it. The question of food is enough to induce them to leave one place for another.

Because of this situation the farmer's wife is often forced to prepare more elaborate meals and food of a sort that appeals to the particular hired man she has to feed, regardless of the tastes and sometimes even the needs of her family. The family might sometimes be willing to eat a simple meal of mush and berries for supper. Such a meal would never do to set before the average hired man. Thirty-five hundred calories made from the proper proportion of about 4 ounces of protein, 4 ounces of fat and 16 ounces of carbohydrates might be secured at as reasonable an amount as thirty cents per day exclusive of labor. Since the aim of most hired men is not 'eating to live' this sum is hardly adequate.

The following is as simple a day's ration as would satisfy the average hired man:

<i>Breakfast</i>			<i>Dinner</i>		
	Ham and eggs		Roast beef	Dressing	Gravy
Fried mush		Jam or syrup	Mashed potato		Boiled turnips
	Baking powder biscuit with butter			Sliced tomato	
Coffee		Cream and sugar	Bread	Peach butter	Butter
				Cherry pie	
			Coffee		Cream and sugar

<i>Supper</i>	
Cold roast beef	Pickles
Mashed potato balls	Green peas
Fried apples	Slaw
Bread	Butter
Sliced peaches	Chocolate cake

The next day this menu might be varied by substituting steak for ham and eggs, fried chicken for roast beef, and a beef hash for the cold roast beef. Hot rolls might be used to vary the bread, and other vegetables and deserts substituted for those named.

The cost of material for such a fare as this, furnishing 3500 calories of food material or more, would be at present values at least sixty cents per day. Added to this would be the cost and labor of preparing three hot meals a day. If there were a number of persons in the family the cost of feeding them might be materially increased. This would make the amount to be charged to the hired man's meals often greater than the actual amount of food he consumed.

When teachers of Home Economics are teaching food values in connection with the feeding of the hired man or day laborers on an economical basis they must remember that the American laborer on the farm is an extravagant feeder and looks upon his food as a principal part of his pleasure in life.

It would never do to use many of the cheaper and yet wholesome substitutes for more expensive foods when feeding a hired man. Beans or any other meat substitute for meat served without the meat would begin dissatisfaction, as would liver, and meat dishes made from the neck of beef. Hired men want beef steak and good roasts. Dried fruits, especially prunes, are looked upon with scorn by the hired man, and so is also a cold lunch or supper. Oleomargarine instead of butter, and skim milk instead of cream for breakfast foods and coffee would be enough to start a riot. Either the hired man must be trained to demand a simpler diet or, since this is hardly feasible, students of Home Economics who are going to meet the problem of feeding the hired man must be taught the other factors beside the necessary caloric requirements entering into the planning of his diet.

[Miss Allen, the author of this article, is herself the daughter of a farmer and speaks from practical experience and observation. Will not others whose experience has varied give us their results?—EDITOR.]

TWO COÖPERATIVE VENTURES

Our readers of two years ago will remember a series of articles on Coöperation as directly affecting the household. By far the most successful and interesting of these experiments was the Coöperative Store of Montclair, N. J. Its further development and frank statement of its problems will therefore be of great interest. This communication was contained in a letter from the Rev. Edgar S. Wiers who has been a staunch friend and adviser of the enterprise.

Our coöperative ventures here are plodding along. The store continued a succession of poor managers and lost money again last year, so that the first of this year its continued existence was really problematic, though last year it had done \$73,000 of business as against \$72,000 the year before. The quite unaggressive management had given it liabilities which just about equalled its entire assets and we had to consider whether to go on or close up.

At this juncture we took the bull by the horns and did a rather daring thing. We doubled the amount that we had been paying for a manager and secured a first class man from Buffalo who has conducted large grocery businesses successfully all his life. He has been here since February and has accomplished so much by an active, aggressive policy that we all feel very sanguine indeed about the store. Before he came the business was about \$1100 a week, but it has mounted steadily until now it is running regularly over \$1800 a week and where it was not giving satisfaction before, it is now giving better quality and very advantageous prices and we have just definitely engaged our new manager, Mr. Ward, for three years and expect in the course of two years to clear off our indebtedness and really see what co-operation can do. The vicissitudes of coöperative enterprise are many, as we have found, and it is entirely a question of management.

The personal attention of Mr. Emerson P. Harris, who has been President from the first and is an ardent coöperator of vision and power, is our greatest asset and hope.

News concerning the later-started Coöperative Kitchen in Montclair is also welcome.

The coöperative kitchen has also had an interesting year. Great as were the chances against it, launched prematurely as it was, it seems to be striking its roots deep enough to continue its existence. This is due almost wholly to the fact that the wife of our Superintendent of Schools, Mrs. Bliss, has given herself sacrificially to it as Chairman of the House Committee. Last August we moved into a very large boarding house with 19 rooms. This again was a daring thing, but the correct one. We secured a manager who looked perfect for a time and until February did excellent work. He

had shortcomings, nothing more, which made it wise to let him withdraw as he wished to do then. But he helped to put us on our feet. In moving into the large house, we had a great problem to provide equipment, but the landlord advanced the money and permits us to pay him by turning over half the room rent.

We found out long ago that the outside service of sending meals into the homes is too new a thing to support the institution. The demand is still too slight, and so we have continued the boarding house, with outside service as an adjunct. Just as soon as we can clear off our indebtedness, we shall begin to advertise this feature aggressively. The rise in cost of food is perplexing us now, but every month since last September we have been able to make a payment on our indebtedness. The first six months of this year we paid \$520 off on our furniture account and if the present rate continues we will pay off about \$1000 this year and a year hence be clear of our indebtedness and own probably \$1500 worth of equipment. It is slow but sure and we are gaining a standing in the community and have sent out as high as 300 meals a month into the homes. We cannot do this yet at a reasonable figure. It amounts to 60 or 70 cents per person. We are hoping that as our constitution forbids all profits save the 6 per cent to our stockholders and we have only about \$1000 of stock out and it specifically designates that all profits must be turned to the reduction of our prices, once our indebtedness is paid we shall find it possible to send out meals at a figure that will cause people of moderate circumstances, or at least others besides the wealthy, to make frequent use of it.

We find that almost nobody depends on the Kitchen for continuous service, but it is used as an emergency resource, which is evidently to be the first step of the development of the central kitchen. Thursday afternoons when maids are out, the last meals before people leave town and the first when they return, and such times, are the occasions on which they turn to the Kitchen. We feel that the Kitchen has been unusually fortunate in being able to do what it has in the face of what seemed almost insuperable difficulties, and, though it has gone painfully slowly, every month has marked a step forward.

If things continue another two years as they have the last year and a half in the kitchen, we shall probably have something very significant to report. The first steps of coöperation are pure plod, the incurring of grave and great responsibilities, the facing of scathing criticisms and general misunderstanding. When once we get out of the woods, I imagine half the community will think they are the people who really accomplished the results. Already both Store and Kitchen feel that sentiment is favorable. We are hoping that in time we can have a coöperative laundry, perhaps an employment agency, perhaps a coal company, perhaps a central delivery system, perhaps a coöperative credit union established here. One of these seems to be the next probable step.

EDITORIAL

Some Things for which the American Home Economics Association is Standing. The resolutions passed at the meeting of the American Home Economics Association at Ithaca, included one advocating the passage of the Child Labor Bill. This bill has, since that time, passed Congress.

A second resolution was addressed to the Secretary of Agriculture.

WHEREAS, the American Home Economics Association realizing that the rapid growth and development of Home Economics in this country is largely due to contributions to its subject matter and to the never failing support of its work by the United States Department of Agriculture, and

WHEREAS, its immediate and further development demands that this service be largely increased,

Be it resolved: That the American Home Economics Association assembled at its annual meeting urges the Honorable, the Secretary of Agriculture to further by every possible means the rapid development of the work of the office of Home Economics of the States Relations Service.

At the meeting of the Home Economics Association in connection with the N. E. A., it was resolved:

That the President of the American Home Economics Association be empowered to telegraph to the Chairman of the Committee on Agriculture in the Senate urging an increased appropriation for the publication of farmers bulletins on Home Economics topics, and other Home Economics literature. The total supply is wholly inadequate for the teacher of Home Economics who needs to obtain bulletins in bulk for use as textbooks by the students.

Resolutions also urged the passage of the Smith-Hughes and the Smoot Bills.

One of the most important matters brought before the Association was expressed in the following resolution:

WHEREAS, the wage-earning group engaged in household labor constitutes one-fourth of the total wage-earning group among women, and

WHEREAS, there are no available data of the hours, wages and remuneration, and conditions of work of this group, and

WHEREAS, such data are urgently needed for the intelligent discussion of the problems of labor and family life,

Be it resolved: That the American Home Economics Association assembled at its annual meeting requests the Honorable, the Secretary of Labor of the

United States to take the necessary measures for the collection at the earliest possible date of the desired data concerning wage-earning household workers.

This resolution was sent to the Secretary of Labor and the following reply was received from Mr. Royal Meeker, the Commissioner of Labor Statistics:

Your letter addressed to the Secretary of Labor and transmitting resolution passed at the recent session of the American Home Economics Association, has been referred to me for reply.

Ever since I took charge of the Bureau of Labor Statistics I have wanted to make a thorough investigation into wages, hours, and conditions of work among household employees, including in this group hotel and restaurant employees. The smallness of the appropriations made by Congress to this Bureau and the demands of other lines of work already undertaken have thus far precluded the possibility of making the investigation. I have, however, drawn up a schedule for an investigation into hotel and restaurant labor. It was my intention to put agents of this Bureau upon this investigation during this present summer, but again extraordinary demands upon this Bureau will prevent the making of this investigation at this time.

You probably know that the Massachusetts State Board of Labor and Industries has been authorized by the legislature of that State to investigate hotel and restaurant labor. I am doing what I can to assist the Massachusetts Board in this study.

You will gather from what I have said that I realize the importance of an investigation into domestic labor—the field of labor giving employment to by far the largest proportion of women workers engaged in gainful occupations. I am of the opinion that the surest way of bringing about this much needed study is to present the need directly to Congress and to ask for a sufficient appropriation to enable the Bureau of Labor Statistics to carry through the investigation. If it is left to be taken care of out of the regular appropriation for this Bureau, I am afraid what has already happened every year since I assumed charge of this Bureau will happen again, namely, other undertakings will crowd this investigation off the map.

Is not the American Home Economics Association the organization that should take the lead in carrying out the suggestion made in this letter? Here is some definite work directly connected with our own aims. Many other organizations would cooperate to bring about such an investigation. Shall we work for it?

The last resolution passed by the Association was one in which every member present at Cornell will heartily acquiesce.

Resolved: That the American Home Economics Association offer to Cornell University, and especially to the College of Agriculture, through the President of the University, its thanks for the delightful hospitality extended to the Association during its Ninth Annual Meeting, a hospitality which all have appreciated and greatly enjoyed.

Richards Day. In the November JOURNAL the Home Economics Day Committee will present plans for the observance of Richards Day, or Home Economics Day, on December 3, the anniversary of the birth of Mrs. Richards. Meanwhile we would recommend that those who are to observe the day refer to the suggestions printed in the JOURNAL, November, 1915. A copy of these suggestions will be sent upon request.

ANNOUNCEMENT

After October first the JOURNAL office will be located in the Medical and Chirurgical Faculty Building, 1211 Cathedral Street, where we have secured more pleasant and adequate quarters than we now occupy.

It is hoped that our readers, especially those living in or near Baltimore, will make it possible to visit us at an early date.

Please address all communications to 1211 Cathedral Street, Baltimore, Md.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Principles of Correct Dress. By FLORENCE HULL WINTERBURN. New York: Harper Bros., 1914, pp. 245. \$1.00. By mail of the Journal, \$1.06.

The title of this book might well be changed to that of *Principles of Design for Correct Dress*. With the emphasis generally placed upon perfect technique and the production of historic costumes for pageants and plays, it is inspiring to find a treatment of dress from the design standpoint.

The first three chapters by Jean Worth and the last chapter by Paul Poirer state very definitely the various problems which dress presents to the designer.

The intermediate chapters by Florence Winterburn interpret these design problems to the amateur dress designer.

The book, because it has no illustrations, is of greatest value only to those readers who have had design experience. For instance, such a statement as, "Such great painters as Nattier, Madame Lebrun, Romney, Lawrence, and Gainsborough serve again and again as aids to the costumer in color, design and trimming" means nothing to one who is not familiar with the work of these artists or to one who has no art gallery near at hand.

The people who need just the stimulus which this book is planned to give, are the very people who will not be reached by it.

In the chapter entitled *Colors for the Blondes and Brunettes*, the value of studying the colors used by the masters in the finest paintings is logically presented but fails entirely in its application because the reader cannot study Paxton's *Sylvia*, Sir Thomas Lawrence's *Miss Baring*, Millet's *Portia*, Nattier's *Diana* and Reynold's *Lady Walgrave*.

The book is well worth studying as it relates the subject of costume design to its proper art domain. As a result one rises above mere patterns and stitches and feels the universality of design principles, the mode of interpreting these principles employed by the different nations, the influence of public events upon fashions of the hour and the effect of well designed costumes upon the individual.

ETHELWYN MILLER.

Household Arts and School Lunches. By ALICE C. BOUGHTON. New York City: Russell Sage Foundation, 1916, pp. 170. \$0.25.

This book, "the first separate report on household arts made by any school survey," has something in it for every teacher of every branch of that many-sided subject, Home Economics, for every school officer, and every member of a school board. It is about Cleveland, to be sure, for it is part of the report of the Educational Survey of that city conducted by the Russell Sage Foundation, and its specific recommendations and criticisms have local application. So far, however, as it calls *Household Arts*, as now presented in the schools, to defend themselves and prove their usefulness to the twentieth century woman, and to twentieth century society, it is of interest to every thinking person. It may not speak the final word in the engaging discussion with reference to the difference between housekeeping and homemaking or on the subject of the "relation of household arts to education" whether elementary or secondary.

It is, however, written from a new point of view and new points of view are to be

sought on a subject specially designed for the education of a sex whose responsibilities and opportunities are rapidly changing, if not (as some of us think and others ridicule us for thinking) enlarging.

Household arts, or domestic science, or home economics, or what you will, as now taught, came into the educational system at a time when it was even more exclusively man-directed than at present, and the fact that women were largely in charge of the details of administration did not prevent it from reflecting the masculine point of view on women's education. Woman has in the past made man comfortable and furthered his work by certain activities. These, in the opinion of many educators, she should be encouraged to continue, and she should perfect herself in them. Now it is an open question whether woman serves more successfully if her energies are directed into time-honored channels than if she takes up new forms of work, and her point of view is needed on this matter. In order to think straight on the subject she must get out into the world among people and see what is being done there. "Seeing," of course, in these days of complex relationships, means studying under expert direction, and right here we have one secret of the value of this book.

Turning to the last page, which contains a short sketch of the writer's life, we find that she has added to her technical training in household arts and her long experience as an administrator of school lunches a course of study in economics and sociology and that the report is her doctor's thesis. This gives point to her statement: "The Cleveland teachers are distinguished by their enthusiastic faith in household arts as being of vital importance in the education of every girl. They think of their subject as one which is not only expanding rapidly, but is also markedly increasing in public favor. They want to keep abreast with it and sacrifice their vacations for summer school work, but they do not go afield and are almost never found in courses in sociology, economics, or social and industrial history.

The courses they choose are in their own specialty and most frequently are those which deal with highly technical phases of it." (p. 90.)

Readers will differ as to the specific recommendations and conclusions of this report, but they can hardly fail to agree that it will do valiant service in making us stop and ask whither we are going in this matter of Home Economics teaching, and if, when all things are taken into consideration, we are faced in the right direction.

CAROLINE L. HUNT.

The Nutrition of a Household. By EDWIN TENNEY BREWSTER and LILIAN BREWSTER. Boston: Houghton Mifflin Company, 1915, pp. 208. \$1.00. By mail of the Journal, \$1.08.

"A housekeeper getting twenty-one meals a week with her own hands, and a householder whose natural masculine interest in machines extended to the stoking of his own bodily engine, have set down as much of the modern theory of animal nutrition as they have themselves found it practically convenient to know. Lusk and Voit and Rubner and the Department of Agriculture—boiled down—and put—into form for the non-technical reader."

This condensed quotation from the preface to *The Nutrition of a Household* fairly describes a book which seems to the reviewer a valuable contribution to the literature of Home Economics. Anyone who has even a slight acquaintance with Lusk and Voit and Rubner and the Department of Agriculture will agree at once that the authors have set themselves a large task but not only the investigators named but a number of others, as far as their work bears on the matter in hand, really have been boiled down and served up in fairly non-technical and very interesting language. Food and its functions are discussed from the usual standpoints with the emphasis on economics and energy. The chapter headings are in character with the general style of the book: The Human Machine; What all the World

is Eating; A Thousand Food Units for a Dime, and others.

It may be that the very purpose of such a book makes it impossible to avoid certain statements that are not strictly accurate, such as "all else over and above our daily needs, no matter what its source, we convert into fat" (p. 71); and "We employ some 150-200 calories to digest food" (p. 36); and such unproved generalizations as the following: "There is no sort of foodstuff which forms muscle which does not equally form brain, nerves, etc." (p. 15); and "About all the real work we get out of protein is the slightly more than half as much sugar which we make from it. The remainder, which contains the amine radical, gives rise to various harmful products, among them uric acid, which is the probable cause of gout and of some forms of rheumatism" (p. 91). The latter part of the statement last quoted is however misleading, as are the following: "The amine radical (in normal metabolism) drops down through a score of different compounds, none of them wholesome and many of them poisonous. When protein elimination goes wrong, we get—auto-intoxication, rheumatism, gout, hardened arteries, premature old age. Even at best we risk ptomain poisoning and sunstroke" (p. 98). "The special flavor of meat and fish are due to—the decomposition products of the working muscle—more of those troublesome amino bodies which arise from all protein food" (p. 110-111)—the gouty and rheumatic, who are being poisoned by their own protein derivatives" (p. 111).

The last two statements rather discount the recommendations (p. 112) of soup as putting "a tired diner into a state of mind and body to utilize the thousand or more (calories) that follow it," for the soup is likely to be simply an extraction of the "poisonous" protein derivatives.

The sections open to such criticisms as these, however, do not form a large part of the book, which is, as has been said, a valuable one. It is vigorous and concise in style; it holds the attention; it brings recent developments in nutrition within the reach

of any housekeeper with fair training in chemistry and physiology and a fair knowledge of the science of food. It is a book that will repay study and one that extension workers will find especially welcome among the better informed women whom they serve.

RUTH WHEELER.

Milk and Milk Products in the Home. By JOHN MICHELS. Farmingdale, N. Y.: 1915, pp. 100. \$0.75. By mail of the Journal, \$0.81.

This book is "intended for students in Home Economics and for housekeepers in general." Those who insist upon so-called "straight science rather than adapted" chemistry or physics or bacteriology will find their opinion confirmed by a perusal of this book. In such adaptations, it is difficult to avoid sacrificing accuracy to simplicity—a sacrifice that is found repeatedly in this book. Students are so prone to careless thinking that it is a pity to give them in print (always over-respected) such encouragement as the following: "heat and energy;" "heat destroys the soluble lime;" "water—a conductor of—cold."

In the light of present knowledge, it is misleading to read that "(milk) albumin closely resembles casein in composition" unless elementary composition is specified; also that "the chief purpose of ash is to build bones, teeth, and blood" (p. 12); that "milk contains all the elements necessary to life in the proper proportion" (p. 13); that "the superior digestibility of butter is due to the large percentage of soluble fats;" that "the enzymes of milk are responsible for the increased digestibility of other foods when taken in conjunction with milk" (p. 12); that "lactic acid organisms exert a favorable influence in the intestine" (p. 21). Many similar examples might be given.

The information is in many sections so meager as to leave even a beginner dissatisfied. It is to be earnestly hoped that later editions will more fully meet the great need that exists for a book on this subject.

RUTH WHEELER.

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NEWS FROM THE FIELD

Nebraska Child Welfare. The Child Welfare work at the Nebraska State Fair added this year an important section, the examination of children who are below normal. The work of previous years had been the scoring of the best babies. The Child Welfare booth had been for years one of the most popular places on the grounds but it was felt that it did not reach the children most in need of help. Dr. Sophie Hinze Scott of Des Moines, Ia., was in charge of this new section. Mrs. LeMar of Osceola, Nebraska, was in charge of the entire work, and Miss Alice Loomis, of the University of Nebraska, was one of the helpers.

The Woman's Club work in the Extension Division of the University of Nebraska has a unique organization and one that is unusually satisfactory. Mrs. Emma Reed Davisson is in charge of this work. Her province is the bringing to the women of Nebraska all that the University can offer along Home Economics lines through Club study. In the past year three hundred clubs have been assisted, one hundred twelve of which are purely rural. Rural is here applied to only those communities that are outside of any village however small. Some of the women come thirty miles to a meeting. This work is, in many cases, "the follow-up" of the one week continuation schools that were held last year.

The assistance consists in helping clubs to organize and in furnishing them suggestions and material for study. Through co-operation with the State Circulating Library, a Home Economics Library has been made available. There have not been enough of these libraries to supply the demand since the courses of study have been issued. This librarian and Mrs. Davisson also send out interesting readings for clubs

not wishing to prepare a program. Usually the next year a club will undertake a miscellaneous program or the program for the study of Nebraska. Later on they take up special lines of study and work. Many of the clubs are doing splendid pieces of civic work. A civic outline and material on Child Welfare have been particularly useful. Mrs. Davisson's work for Home Welfare has been recognized by the State Federation of Clubs in which she is Home Economics chairman. She is also president of the Nebraska Home Economics Association. This summer she studied Pediatrics in Harvard medical school. All indications are that the Child Welfare work is one of the most needed. Through the coöperation of a number of agencies, the department is able to keep in close touch with both the desires and needs of the home makers of the state. With these in mind the work is expanded each year.

The Summer Session of the School of Practical Arts, Teachers College, Columbia University, brought together the largest number of students in household arts in the history of the institution. Four hundred and fifty separate registrations were made in the courses in foods and cookery, about 100 in dietetics courses and as many in the economics of the household, including a graduate group of twenty, and there were similar large registrations in all of the household arts departments. The School of Practical Arts offered altogether in its departments of households arts, fine arts, industrial arts, music, and physical education, 312 points of instruction; and there were over 5500 points registered by the summer students. An average student program is 6 points.

Pratt Institute, School of Household Science and Arts. It is often recognized that the average Normal School or College student majoring in household science begins to teach cooking with little or no personal experience in the actual preparation and serving of family meals.

This lack of experience was taken by Pratt Institute as the keynote for the summer work required of all returning students in the Normal Household Science course. In order to become a fully accepted senior, therefore, every student who has passed her junior examinations must have carried out in detail before September 20, 1916, the following schedule:

Required: The serving of three meals daily for a family of not less than four persons for fourteen consecutive days. This to include:

- a. Menu making.
- b. Purchase of all food supplies.
- c. Preparation of all food served, except that baker's bread may be used once a day, preferably in toast.
- d. Washing of all dishes and utensils in the preparation of food. The washing of dishes and silver used on the dining table may be partly or wholly done by someone else.
- e. Keeping records as follows:
 1. All menus, with number of persons served, total cost and per capita cost. Each menu to be dated, signed, and name of town and state given.
 2. Staple price list, a copy of staples being given each student and prices filled in as used, price variations being noted wherever signified.
 3. Recipes that are new and good to be put on separate index cards.
 4. Conditions of work.
 5. Record on one card giving the following data:
 - a. Average number eating each meal.
 - b. Total food cost for the 42 meals.
 - c. Per capita daily cost.
 - d. Points for observation.

During the fourteen days the student is exempt from preparing the evening meal on

Sundays and on any one other night each week, but must buy for and plan these meals and include in all reports.

Where the student has a family of seven or more to cook for she may have help in all dish washing and may use her own discretion as to buying bread, reporting accordingly.

The Home Economics Association of Philadelphia has planned, for the coming year, to have the various committees in charge of the different meetings, with the chairman of another committee acting as hostess. The first fall meeting will be given over to the report from Cornell, and the History of Home Economics in Philadelphia. Each committee will procure the speaker for the evening. The committee on School Feeding is planning to show a "Movie" of the Luncheon System of the Philadelphia Public Schools, both high and elementary. So, throughout the year each committee will have interesting "attractions."

The Connecticut Home Economics Association held its annual meeting in New London, in May, with Miss Maud E. Hayes presiding.

Mr. H. S. Hitchcock gave an interesting address on the Vocational School, and Miss Elizabeth Sprague spoke in the interests of extension work in Home Economics.

After the meeting the members made a tour of inspection through the Vocational School and, later in the day, visited the Connecticut College for Women.

The fall meeting of the association will be held in Hartford.

During the coming year the association plans to make a survey of the teachers throughout the state, and what they are doing in Home Economics work.

Detroit Home Economics Association 1916-1917. Saturday, September 9, Boat Club Luncheon; Wednesday, October 18, Round Table, Scripps Library; Wednesday, November 15, Mme. Madeleine Bourdon, Library; Wednesday, December 6, Social,

Miss Grant's home; Saturday, January 20, Paulina Raven, Federation Building; Wednesday, February 21, Social, Miss Harvey's home; Wednesday, March 21, Annual meeting, Scripps Library; Wednesday, April 18, to be announced; Wednesday, May 16, Geo. Austin, "Weights and Measures;" June, Annual picnic.

The Homemakers' Club of Quebec. The recent convention of delegates from the Homemakers' Club of Quebec at Macdonald College deserves more than passing mention. When forty intelligent women from the rural communities, imbued with a common spirit, come together to discuss measures for the improvement of conditions affecting the welfare of their homes, their schools, and their country, something valuable is sure to come out of the deliberations.

The progress of the Homemakers' Clubs in this province under the direction of Miss Campbell has been steady, and the results accomplished have been very satisfactory. Since the outbreak of the war, however, the direction of their efforts has been to some extent changed, much attention being given to Red Cross and other patriotic forms of work. Nevertheless, time has been found to deal with many matters of public interest, such as the improvement of the school house and school grounds where the children spend most of their time between the ages of six and fourteen.

It is encouraging to note the organization of the rural women at this time, for undoubtedly after the war their services will be required in many matters of reconstruction. The motto of the Clubs, "For Home and Country," is significant of the scope of their efforts, and the reports read at the Convention brought out clearly the many good works that have been done by the women during the past year.—*Jour. Agr. and Hort.*

Dietitians for Red Cross Work. Miss Jane Delano, Chairman of the National Committee of the Red Cross Nursing service in Washington, has recently appointed Miss Emma H. Gunther of Teachers Col-

lege, Columbia University, Chairman of a special committee to pass upon the selection of dietitians for hospital units in Red Cross work. The other members of the committee are Miss Isabel E. Lord, Pratt Institute; Miss Annie George, Dietitian, Mount Sinai Hospital, N. Y.; Miss Annie Goodrich, Nursing and Health Department, Teachers College.

A special application for enrollment blank is sent on request to any dietitian, who requests a statement regarding her training, any experience as dietitian she has had, and also any other preparation she has had which she feels fits her for this special kind of work. Later, if the committee has passed favorably upon the applicant, physical examination blanks together with immunity blanks are sent to be filled out.

These dietitians, if appointed as members of hospital units, shall be counted as one of the 50 nurses, and will receive the same salary as that allowed nurses—\$50 a month. Their duties include the preparation of special diets. Great importance is attached to this position of dietitian, and she should be one well-fitted to meet the many and varied responsibilities that she is likely to have to assume.

Mrs. Lizzie Merrill Palmer, the widow of Senator Palmer of Michigan, has bequeathed the residue of her estate amounting to approximately \$1,000,000 "for the founding, endowing, and maintenance in the city of Detroit or the township of Greenfield, of a school to be known as the Merrill Palmer Motherhood and Home Training School, at which, under such plan and system and under such rules and regulations as shall, in the judgment and wisdom of those upon whom the administration of this estate shall devolve, be adopted, girls and young women of the age of 10 years and upwards shall be developed, educated, trained, and disciplined with special reference to training them mentally, morally, physically, and religiously for the discharge of the function of wifehood and motherhood and the management, supervision, and inspiration of the home."

The will provides that girls who are unable or unwilling to pay the cost of their board at the school shall be educated free of charge.

"I hold profoundly the conviction that the welfare of any community is divinely and hence inseparably dependent upon the qualities of its motherhood and the spirit and charity of its homes," the will states.

The School of Home Economics of Battle Creek, Michigan, is to have a booth illustrating its work at the exhibition to be held in conjunction with the golden jubilee celebration of the Battle Creek Sanitarium, October 3, 4 and 5.

Brief Notes. Some additions to the University of Illinois faculty are as follows: Miss DeGarmo of Agnes Scott College, Atlanta, is to be instructor in Dietetics. Miss Larueda Perry, who has her Ph.D. in Economics from Bryn Mawr, has been added to the staff as "Associate", making the University "better prepared than ever to take care of the Economics of the Family."

Miss Jean MacKinnon, formerly of Ames, Iowa, has had charge of the food work in the summer session and is to be instructor in Foods the coming year.

Miss Olive Percival, assisted by Mr. Floyd Fogel, will be in charge of the University of Illinois Home Economics car that is being overhauled and improved to more fully serve its purpose, and that is to start out in September.

Miss Helen Knowlton, formerly teacher of Science in the public schools of Springfield, Mass., and for four years instructor in the Department of Home Economics, Cornell University, has been appointed Dean of Women and in Charge of the Department of Home Economics at the State College, Durham, N. H. in place of Miss Nellie E. Goldthwaite whose resignation took place at the close of the year.

Mrs. Joseph C. Gawler of Denver, Colorado, has been chosen chairman of the Home Economics Committee of the General Federation of Women's Clubs, in place of Miss Helen Louise Johnson.

Miss Johnson has done a piece of remarkable work in her two years service of the clubs, and has brought Home Economics to the front in Federation affairs in a way that should be appreciated by the American Home Economics Association.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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THE HOME AND THE COMMUNITY¹

A. R. MANN

Professor of Rural Social Organization, Cornell University, Ithaca, New York

Your president has asked me to present a view of the community as the larger family group, and to discuss community life as an expansion of home ideals. You have spent the past four days in a somewhat strenuous consideration of practical problems in much detail. The topic which has been assigned to me invites large play of the imagination and admits of much resort to idealism; and we shall be interested in it from the standpoint of a few principles involved rather than as to practical details.

Why may we regard community relations as an expansion of home ideals? Family ideals represent accumulated and refined group ideals. We can rest our case for the community better on group ideals than we can on personal or individual ideals. Not that personal idealism is not a condition devotedly to be sought in all society; but such ideals, being individual, may be at variance with one another and may need to be brought into harmony with those of other members of the group and be tested by their applicability to the whole society. Community life is a "problem" for discussion today partly because our common relations and experiences in society have been left so largely to individual impulse, to the pursuit of personal ideals often untested and unfortified by reliable thought and experience. Every conflict in society is a conflict of ideals and interests. The more reasoned the ideals, and the more fit they are to be the ideals of the whole body of persons affected, the

¹ Presented at the Ninth Annual Meeting of the American Home Economics Association, Ithaca, N. Y., 1916.

larger the group which can be brought under them and the fewer the persons on the outside who are antagonistic. Ideals which are the fruitage of painstaking investigation and deliberation, which are the outcome of intelligent consideration of all phases of our common welfare, and which have the acceptance of the group, are the forces which help to draw us forward in our community experience. It is the insistence on personal ideals which rest on neither reliable knowledge, reliable thinking, nor reliable experience, which retards human progress. One of the problems of civilization is to decrease the number and vigor of the latter sort of ideals, and progressively to increase the number and the vigor of the former sort.

Validity in ideals as in many other things lies on the side of the harmony of many rather than the irresponsible pursuit of that which disregards the many. Not that anyone should drift with the crowd; a drifter has no impelling ideals. But, when one undertakes to set up his ideals against those of the group, he is under the necessity of justifying his independent stand and showing why it should become the position of the group as well as of himself. Our large internal problems in this country, as elsewhere, have their rise in part in the abandonment of our group life and activity to the pursuit of untested and unproved personal ideals, impulses, and ambitions. The condition to be sought is the maximum of individual liberty which at the same time is compatible with the welfare of the whole group.

This is the condition that obtains in the well-regulated family. It is in the family *par excellence* that we find the conformity of individual ideals and motives to the welfare of the group. We know all too well what occurs when the members of a family follow their several wills in disregard of the wills and rights and interests of each other. We have long since pronounced anathema on all such. We have been slow to realize, indeed we have not yet fully realized, the lamentable disruption which results from precisely this condition in the greater family which we may call the community or the nation. As in the normal family the restraint of the individual works for the best good of all while not unduly hampering anyone, so in society is there a pronounced need for the application of a similar code, resting on the principle of each for all and all for each.

We have spoken of the normal family. If we are to draw an analogy between the community and the family group and think of the community as the larger family group, we must first project our notion of

the family which is to be our standard of comparison; and in so doing we are likely at the same time to detect the intimacy of the relation and the sensitivity of the reactions between the family unit and the community.

In the recent book on *The Family as a Social and Educational Institution*, Dr. Goodsell points out that perhaps the characteristic of the twentieth-century family which most sharply challenges the attention of the student of family history is its instability. Comparing the loosely organized modern household with the highly unified family organizations of the Ancient Romans and the Middle-Age Teutons, Dr. Goodsell says that

The modern household not infrequently represents the phenomenon of a group of clashing wills, an association of highly individualized persons, each asserting his rights and maintaining his privileges with greater or less success. . . . Obviously the individualistic spirit has undermined and in part superseded the autocratic; and although the gain to humanity has been great indeed, the advance has not been made without some loss. The family of the twentieth century is markedly unstable.

One cannot delve far into the social literature of the day without hearing the changes rung on the dissolving family unit and the invasion and disruption of the home by many influences. The school, and the church, and industry, and the State have all invaded the household and carried away from the family fireside some of the once exercised functions, responsibilities, and sacred rites of the home. And social evils of many sorts, unregulated or improperly regulated labor of women and minors, divorce, desertion, inharmony, and the rest, have entered in to reside, or to leave their blight. These assailers of the integrity of the family are marshalled before us, and we are told that in America the family organization is passing away, and that Europeans look upon America as the place of the disintegrating family.

The family is one of the community institutions. It is the most numerous of these institutions. Each family group is subject to external pressure from every other family institution and every other community institution within the area of its social relations. The family institution as such has not sufficient resistance to withstand unaided the combined unsocial propensities of its own members and of the rest of society. Available evidence goes to show that families which have been destroyed have been the victims of causes independent of the family institution

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itself. The family falls alike before overabundance of irresponsible wealth, leisure, and stimulation, and insufficiency of the means of subsistence, of leisure, and of stimulation. But neither of these categories of causes springs out of the family institution as such; they find their source in our general economic and social organization and they are set over against the family organization. And families that collapse from such external pressures are to be regarded as effects rather than causes. So far as family disintegration exists it lies out at these two extremes of surfeit on the one hand, and moral, mental, and physical starvation on the other.

The relatively normal healthy families which lie in between the extremes are not dissolving. They are not perfect; but we have not achieved perfection in any of our social structures. It is no indictment of the family institution that here and there persons are trying to live with each other who are temperamentally unfit to live with anybody. The seat of most of the difficulty, however, lies in the maladjustments in the social environment in which the family institution finds itself. In this substantial middle stratum we have a normal family group which goes far toward meeting our demands. We need to carry over into our community life the spirit and the ideals of this normal family group.

In a normal healthy family there is a common state of mind—there is agreement as to the ideals and standards which the family should seek to attain and the means which the members may be permitted to employ in attaining them. The family is aware of the common wants of its members and what is demanded of each if these wants are to be satisfied. There is mutual responsibility, encouragement, confidence, reliance. There is the very real condition of family pride, dignity, and standing to be maintained. Whether one member suffer, all suffer with him. If one rejoice, all share in the joy. In this healthy family, each will sacrifice himself if thereby the family standing shall be maintained or advanced. There is coöperation. There are common ideals and ends to be served rather than merely individual ideals and ends. The pursuit of individual aims and ambitions is always with due regard to the effect on the family group. The family has a goal toward which it is striving—a goal more or less vague, perhaps, but still in the direction in which progress seems to lie.

When we come to apply this ideal to our community life, and we go back over history as far as the record will permit, we find that community life has been chiefly an affair of conflict—one family protecting

itself against others, one clan, tribe, city, state, or commonwealth struggling against common foes without and conflicting interests within. With the advance of civilization and the amalgamation of the small contending units into larger ones, the inter-tribe and inter-state conflicts have diminished in number and have increased in intensity. Conflict of group with group and between individual members within the groups has been the dominant characteristic of the life of men in societies. The history of society is a history of conflict.

From out this conflict and because of the evils which have accompanied it, there has gradually emerged the concept of coöperation; and in our own day, even though it witnesses the most widespread and bitter series of conflicts in history, the emphasis is more than ever before being placed on coöperation. Even the world-war will give a new content and significance to the term. It is the most compelling entreaty that could be uttered for the substitution of internationalism for nationalism. The exponents of nationalism are exponents of conflict. It is because we are still so deeply in the conflict stage of civilization that the slogan of preparedness against thy neighbor has become the absorbing concern of government, of the press, and of the people. In the calm and the desolation and the disillusionment of the aftermath the futility of hatred and strife and destruction will gain new emphasis, and the bonds of humanity rather than the barriers will be seen more clearly. Internationalism will not yet have been fully established. The nation is the largest unit in which we have yet been able to achieve a basis of mutual regard, of common interest and solidarity. But world coöperation will have made another great stride toward its own. Men are beginning to believe that life, community life as well as family life, is a coöperative affair; that we are all copartners in the working out of our individual and collective ends; that our task on earth is a community undertaking, and that there is no such thing as a pure individual, or a group independent of other individuals and groups; that we are able to exist as human beings, endowed with self-consciousness and personality, only because we do live in a social medium. The family idea, the brotherhood of man, is beginning to have significance in our community relations. The further history of society must become increasingly a history of coöperation.

In order that there may be coöperation in the larger social group as in the family group, there must be a common state of mind, common aims, ends, and interests. There must be agreement and mutual under-

standing and confidence. There must be recognition of the common wants of the members of the whole group and the responsibilities and limitations which the spirit and purpose of copartnership place on each. Irresponsible selfishness must be supplanted by the recognition of the equal rights of all to share in the benefits of advancing civilization. Coöperation in duties and copartnership in enjoyments must come increasingly to be the prevailing condition. As in the family the member must consider himself with reference to the group, so in the larger realms of human association the individual must somehow be brought to conduct himself with due regard to his fellow human beings. Equality of opportunity, fairness, respect for the opinions and ambitions of one another, patience in the face of irritation, mutual helpfulness and encouragement, readiness to accommodate one's self to the wishes and welfare of the whole group, are some of the salient features of the family institution that need to be incorporated into community relations.

One difficulty in our community life is that we have not discovered the meaning of life, we have lacked direction and goal. What is the meaning of life? Our answer is that the meaning of life is the enlargement and refinement of human personality by every means of which man is able to avail himself. The most important things in this world are the human beings who live in it. The never-ending purpose of life is the enrichment of the personalities of human beings in ascending scales and in ever-increasing numbers. This is the keystone with reference to which the structure of life must be builded. It is the neglected factor in much of our community organization.

Our life in society is not organized with reference to the human values but with reference to the material values. The wealth-getting interest has been and is today dominant. The bitter struggle between capital and labor bears loud and undeniable testimony to the fact that our great industrial development places material interests ahead of human interests. The more than three million organized workers in trade unions in America stand as a protest against this subordination of the human values. I do not mean that organized labor consciously asserts that human interests must be given a new rating; organized labor is often as greatly at fault as the capitalists, the wealth-holders, whom it opposes. The cause back of the great conflict of classes in our day is the failure to recognize the necessary preëminence that must be given to human values and the welfare of persons, in the organization of industry.

Last winter and spring I attended the meetings of a number of labor unions of various sorts, from the efficient federation of labor in one of our largest cities to the down-and-outers assembled in the I. W. W. These men, whose methods we may or may not approve, have a grievance. They give testimony that something is out of gear in the organization of industry. They usually fail to discover just what is out of gear; their discontent with working conditions has causes which lie far deeper than the questions of hours and wages. Some groups in our society are subject to comparatively unfavorable terms while other groups enjoy comparatively favorable terms with reference to participation in all the benefits of our common life. When in the home one child is favored and another stands in disfavor there is inharmony and abnormal development of both; so in the nation in which there are favored and handicapped groups there inevitably is inharmony and abnormal development of the members. We shall not be in the way of reducing the conflict element to a minimum until, in practice as well as in theory, we give the human values the place and rating to which they are entitled.

This organization is one among many agencies for the elevation of human life. Your interest centers in the home and the efficient organization of its activities. It is in the home above all other places where human values receive their just recognition. The home is the factory for the production and partial improvement of the raw material of society. It is here that the twig is bent. It is in the environment of the home that each new generation of men and women ripens for participation in community affairs. In our generation we do not charge the home with the full preparation of its membership for citizenship. But it is clearly apparent that the essential spirit of the healthy family group needs to find increasing expression in our community group. There is a close similarity between the conditions which prevail in community life and those which prevail in the family. Where we find the improperly functioning family we shall find disturbed community life. That community and that nation will be relatively strong in which the prevailing type of relationship in its families predisposes the individuals produced by the families to the sort of social coöperation upon which the nation relies, or needs to rely, for its progress. Fidelity, mutuality, fairness, gratitude, forbearance, sympathy, constancy, dependability are the basic relations in all vital human groups, whether the family or the larger community group. These are the indispensable elements in any advancing type of human association. It is through the increasingly

reliable exercise of these qualities in ever-widening ranges of human experience that human personality is to be progressively enlarged and our relations as human beings in society are to be placed on a valid basis. The home is the nursery of these primary social qualities. Society everywhere exhibits the character of this nurture, be it good or bad. Except as the individual learns in the home the elemental social relations he comes into the community life disadvantaged, and the progress of our community life is retarded.

The home and the community are inseparable parts of one whole. The way in which the community conducts its affairs reacts on the home, affecting its stability and its character. The way in which the home functions determines what sort of persons shall constitute our communities and what ideals they shall contribute to the common welfare.

We are living in a day of great achievements—achievements in all ranges of our experience. We need most at the present time, with its unprecedented industrial development, to keep in the forefront the achievement of ever-larger human values, larger outlooks for the individuals, richer characters, the making of men that shall count each better than himself, or at least as good. We are but beginners in the school of life, struggling with the rudiments of existence. Our vision is concentrated still on the A B C's. We have scarcely begun to sense the riches of experience which shall be ours when we have brought all things into subjection to the development of human character and personality, when we shall no more think of maintaining one attitude in the home and another outside the home; when we shall be concerned to see that all artificial handicaps that make men unequal in the competitions of life are reduced to the minimum; when life shall become more than meat; when the life abundant shall be the normal.

You stand as a body for a coherent family group. With no less tenacity and clearness of vision we must stand for a coherent community group, in which every person is recognized for his full value.

If, then, as workers in any field of human service, we base our plans and projects on the fundamental consideration that we must make the material values with which we are daily absorbed minister to larger human values, if we conceive our ultimate purpose the enlargement and refinement of human personality, and if the ideals and standards which we follow after have been tested with reference to their effect on the whole body of persons concerned, we shall be building securely in the direction in which progress actually lies.

THE SANITATION OF FOOD STORES AND MARKETS¹

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Out of an income of less than \$1000 a year, the average urban family of five in most large American cities has to spend from 40 to 50 per cent for food. Undoubtedly, an important factor contributing to this large percentage is the cost of municipal food handling and distributing, as was indicated by a recent study in New York City, where it was ascertained that about 37 cents out of every consumer's dollar went for the cost of municipal food transportation.

Public markets are considered by many an essential factor in combating the high cost of foods resulting from the present individualistic methods of municipal food handling. The past few years have seen many experiments along market lines, either under public, semi-public, or private control, either temporary or permanent in character. It would seem that the most effective results might be expected with the highest degree of municipal control, including a regulation of rents, of retail food prices, and consequently of profits. Obviously, if a public market is properly situated, it can effect still further economies to the consumer by the elimination of the cost of delivery and the loss resulting from the operation of the stores on a credit basis.

The establishment of public markets, especially when of a temporary and experimental character, introduces into the community life many problems of intimate sanitary and hygienic importance, problems which the public market has in common with the retail store to a large extent. Concentration, however, of retail business in certain areas, possibly under one roof, increases the magnitude of the problem and at the same time enhances the directness and simplicity with which a sanitary control can be established. In any event, whether under private or public auspices, any municipality must meet the responsibility of establishing and maintaining adequate sanitary and hygienic regulations in connection with the city's food distributing system.

Sanitary food control is of interest from several points of view:

1. In the first place, there are the representatives of the municipality, usually the health department officials, who have the responsibility of

¹ Read before the Section on Home Economics of the National Education Association, New York City, July 5, 1916.

inspection and law enforcement. Of great significance in this connection are the recent findings of health departments, perhaps especially the New York City Department of Health, to the effect that intelligent, educational inspection, particularly in the small food stores, is tremendously more efficient, from the point of view of accomplishing results, than is any amount of uninformative visiting, legal prosecutions, and insignificant fines.

2. Further, the dealer himself is intimately concerned in sanitary law compliance. It is essential that he be made to realize the economic importance of sanitary food protection and waste prevention, in addition to the health hazards of careless food infection.

3. Finally, of course, there is the consumer, the purchaser, who is interested in food protection and who desires food protection, aroused to the necessity by the motives of disease prevention, cleanliness, decency, and estheticism.

From whatever point of view the problem is approached, however, those interested soon realize that the special problems of market sanitation are, in the main, three in number. In the first place, because of the perishability of ordinary food products, and because of the risks of disease transmission, there are the dangers of contamination and possible infection by means of dust, dirt, flies, and dirty fingers. It is certainly conceivable that tuberculosis, typhoid fever, and other diseases may be and perhaps frequently are transmitted in this way. Further, there are the special dangers of decomposition, the rare development of genuine ptomaines, and the more frequent pathological, bacterial infections. Finally, there must be mentioned the comparatively insignificant hazards resulting from adulterated or preserved foods, a problem in fraud prevention, largely of economic rather than of sanitary significance.

Such a classification does not, of course, include certain other possibilities, such as the presence of natural poisons, as in mushrooms, the presence of animal parasites, as in pork, or the development of specific poison, such as solanine in potato sprouts. It ignores entirely what would seem to be the most important food factor in health conservation, namely, proper dietary food selection, a factor of hygienic rather than of sanitary importance and one which is, therefore, *inappropos* at this point in the discussion.

To confine the discussion largely to the sanitary aspects, it might, perhaps, for the sake of clearness, be best to adopt a rough classification

of the major points and to discuss these very briefly under the headings presented in the following tabulation:

MAJOR POINTS IN MARKET SANITARY CONTROL

A. THE PRODUCTS AND THEIR CARE—LABORATORY CONTROL

1. Chemical analyses

It is, of course, possible nowadays to find in most large cities adequate facilities for the chemical study of the foods offered for sale in municipal or private markets or in food stores. Such analyses should be made to detect illegal adulterants or preservatives and to insure protection against the sale of deteriorated or decomposed products.

2. Bacteriological analyses

Routine procedures of this kind are, of course, essential if milk and dairy products are permitted to be handled in the stores and markets. Bacteriological analyses, to detect contamination of foods from various sources, may, from time to time, be worth while. Consequently, the necessity for municipal equipment to meet demands in this field should be recognized when market plans are being developed.

3. Calorific analyses

This is the type of analysis and check which cities will have to recognize in the future. Eventually, governmental authority will have to take the responsibility for food standardization, and, if this standardization is to be on a rational basis, calorific values will have to be employed. Further, if the purchaser is ever to be educated to the point where she can buy her food supply on an intelligent food value basis, there will have to be a mechanism for routine calorific food analyses. In the present state of development, an equipment of this kind cannot, of course, be considered a prerequisite to a market establishment. At the same time, its need should be emphasized, so that in the future it may become an essential part of municipal market control. Again, it must be pointed out that this is, of course, of hygienic rather than of sanitary importance.

B. THE STAFF

1. A living wage

As Dr. Gorgas has recently emphasized, essential to the hygienic welfare of the worker is a sound, economic status. It means for the industry a higher degree of intelligence and coöperation from the employees, factors which are essential in the enforcement of the rules of personal hygiene. This is perhaps of greater significance in food handling establishments than in almost any other industry.

2. The selection of healthy employees

This is of the greatest importance in food industries, if we are to avoid a constant succession of "Typhoid Mary" catastrophes. Modern health departments are requiring that food handlers be free from communicable disease. The proper place to inaugurate a check is at the beginning of the period of employment. This can be done only by an initial medical examination resulting in the selection of healthy employees.

3. Periodic medical examinations

This is now being required by modern health departments, for the detection of disease carriers or individuals suffering from communicable diseases. Here, of course, municipal laboratory equipment is essential for the conduction of Widal and Wassermann tests, the examination of sputa and throat cultures, and the bacteriological study of excreta. These requirements are, of course, applicable to small retail food establishments and, indeed, to restaurants, boarding houses, and hotels. On the other hand, the city, if it maintains municipal markets, has a special obligation for guaranteeing that the food products under its control shall be handled by individuals free from communicable disease.

C. EQUIPMENT AND METHODS

In this field the details are numerous and it is impossible, in this paper, to discuss them at all fully. The major points might be enumerated as follows:

1. It is absolutely essential that there be adequate and sanitary toilet and handwashing facilities for the market and store employees. Hot

water, individual towels, and soap from a holder, are essential. Toilets should be equipped with automatic flushes, so as to avoid a series of constant contacts. Washing facilities should be readily accessible in conjunction with toilet facilities.

2. Food should be protected from animal contamination by at least a two foot elevation from the floor.

3. Receptacles with covers should be provided for rubbish and garbage, satisfactory arrangements being made for emptying and cleaning, and the rules of the market should prohibit the accumulation of refuse.

4. Adequate refrigeration is essential. This applies to storage refrigeration facilities in conjunction with the market, and to special refrigeration for local stall ice boxes, or for enclosed display cases. The proper draining of ice boxes, especially where ice is used for refrigeration, is required by practically all market codes.

5. The laws regarding spitting should be strictly enforced.

6. Most municipal ordinances require that food establishments should be properly screened from flies during the fly season. In addition, it is usually required, to quote the sanitary code of New York City, that "no food intended for human consumption should be kept, sold, offered for sale, displayed, or transported unless protected from dust, dirt, flies, and other contamination." This is usually interpreted to apply particularly to foods eaten without being cooked or peeled.

7. Efficient janitorial service, with an arrangement with the stall occupants for cleaning, is necessary, if decency is to be maintained in large markets.

8. Public markets, particularly when under municipal control, should take advantage of every opportunity, by the use of posters, placards, and leaflets, for the education of the public regarding the dangers of food infection as a result of unnecessary handling, the risk in promiscuous coughing and sneezing, and other dangers.

D. THE BUILDING

1. Adequate light and ventilation are not only necessary for the physical welfare of the employees, but are, of course, tremendous instruments in the maintenance of cleanliness and in increasing the commercial attractiveness of the market.

2. Floors should be impervious, water proof, properly drained, and maintained in cleanly condition.

3. A plentiful water supply for flushing and other general purposes is absolutely necessary to market operation. Incidentally, in this connection, drinking fountains should be provided for employees and patrons.

E. ADMINISTRATIVE CONTROL

It would seem, judging from experience in many American and foreign cities, that a concentration of authority and responsibility is an asset as far as the operation of municipal markets is concerned. This implies the establishment of a market department, or at least of a market division in an existing department. The necessity for coördination in this field was most strikingly illustrated by the administrative situation arising subsequent to the establishment of the temporary curb markets in New York City, a year or more ago. While these markets were established by the Borough President's office, on street area under the control of that office, a superficial survey of the diffusion of responsibility indicated that, in addition to the Borough President's office, there were also concerned, from diverse points of view, the Department of Health, the Department of Street Cleaning, the Department of Water Supply, the Department of Docks and Ferries, the Bureau of Licenses, and the Department of Police. Certainly, if New York City is to take further steps in the direction of municipal market development, a concentration of authority is essential.

From the point of view of sanitary control, there can be no doubt that responsibility should rest with one office, rather than be distributed as was the case in New York City, where the Health Department inspectors were supposed to enforce the rule regarding food protection, the Street Cleaning Department provided janitorial service of a kind, and the Borough President's office was responsible for cleanliness as regards the toilet facilities.

Historically, most cities attempting to deal with the necessity for municipal retail markets have paid some attention to the economic aspects of the situation, have attempted to control prices in a greater or less degree, but have, to a large extent, ignored the necessities for special sanitary regulations and particularly for specific educational measures in food hygiene. The markets of Philadelphia and Baltimore,²

² A new municipal market is now in process of construction in Baltimore. This should afford an opportunity to carry out the suggestions made by Dr. Armstrong.

while attractive structures, and while apparently serving a useful purpose, by no means take full advantage of the opportunities for food control and food education. In this field, so far as the observations of the author are concerned, the City of Cleveland is unique. The Euclid Avenue Market in Cleveland, in addition to being a model establishment from the point of view of construction, light, ventilation, refrigeration, food protection, toilet, and hand washing facilities, has taken advantage of many opportunities for education of the consumer, along the lines of food sanitation. Of course, even in this market much remains that could be done in increasing popular knowledge regarding food selection, the economies of food purchasing, and the essentials of food care in the home.

In conclusion, it cannot, perhaps, be too forcibly emphasized that, in modern public health work and particularly in the field of food sanitation, we are at the point where we are ready to drop the word "public" and to talk primarily about health. Paradoxical as it may be, the keynote of modern sanitation, and especially food sanitation, is personal hygiene. This means personal cleanliness. From the point of view of disease prevention, it is undoubtedly of much greater importance for any city to teach its food handlers to wash their hands after leaving the toilet, than it is for that city to solve its sewage disposal problem even though it may maintain an indecent and unesthetic crude disposal by river dilution. From a health point of view, public market and food store control, while it must be founded on a sound, sanitary basis, is to be effected essentially through a program of personal hygiene. If eventually municipalities would meet the responsibility of having this program of personal food hygiene include, not only the infection preventive and disease suppressive factors of food protection, but also the positive, health creative, educational factors of dietary food selection, the markets would then be utilized to something like their full potentiality as creative, social forces.

PRACTICABLE WAYS OF INCREASING THE IRON-CONTENT OF THE DIET¹

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This paper does not deal with iron metabolism nor with the comparative availabilities of the iron compounds present in different food materials. Nor is it its purpose to recommend that a greater effort be made to introduce iron into the diet. It simply brings together a few recipes for iron-rich dishes which were used by the writer while, for experimental purposes, she was living on a special ration containing very little fat, and was at the same time trying to keep up the iron content of her food in the hope of avoiding the anaemic condition which sometimes follows the use of certain special diets.

The ration, which is of interest here only as showing how a large amount of iron can be crowded into a low calorie diet, consisted of ten food materials only. It was taken for nine days during which about 4 pounds in weight were lost and was then abandoned, not because it proved unpalatable or monotonous, but because of the inconvenience that always attends the preparation and use of special diets, and because there was no longer reason to continue it for experimental purposes.

The experiment was unaccompanied by blood tests or by analyses of undigested residues. Its only value, therefore, lies in suggesting practicable iron-rich rations for use in experiments on iron metabolism. In the absence, too, of any exact information about the fate in the body of the iron compounds of food it may possibly be useful in preventing or overcoming anaemia. The dishes of which it was composed include soups, meats, sauces, and desserts. These may be used together to form a diet exceptionally rich in iron or may be introduced from time to time into an ordinary diet to insure a little extra supply.

The following table gives the food materials used, the iron per 100 calorie portion, the amount of each eaten per day, and the iron provided by each:

¹ Presented at the Ninth Annual Meeting of the American Home Economics Association, Ithaca, 1916.

*Iron-rich ration having fuel value of about 1900 calories.²
Iron content 30 mg.*

FOOD MATERIALS	IRON PER 100 CALORIE PORTION	WEIGHT		FUEL VALUE	PROTEIN	FAT	CARBO- HY- DRATES	IRON
	mg.	ounces	grams	calories	grams	grams	grams	mg.
Round of beef (without visible fat).....	3.0	6	170	200	40.4	4.3		6.0
Whole wheat bread.....	0.6	6	170	414	16.5	1.5	84.5	2.4
Egg yolks (8 yolks).....	2.3	5+	144	514	22.0	46.2		11.8
String beans.....	3.8	4	113	47	2.6	0.3	8.4	1.8
Lettuce.....	5.0	2	57	11	0.7	0.1	1.4	0.5
Celery.....	2.7	2	57	11	0.6	0.1	1.9	0.3
Pineapple.....	1.1	8	227	98	0.9	0.7	22.0	1.1
Dates.....	1.0	2	57	198	1.1	1.6	44.7	2.0
Figs.....	1.0	2	57	181	2.4	0.2	42.3	2.0
Raisins.....	1.0	2	57	196	1.5	1.9	43.4	2.0
Total.....				1871	88.7	56.9	248.6	29.9

It will be noticed that the diet had a fuel value of less than 1900 calories and contained about 30 milligrams of iron or about $1\frac{6}{10}$ milligrams per 100 calorie portion, as distinguished from $\frac{1}{2}$ milligram in the ordinary mixed diet. In order that the ration might in spite of these facts provide sufficient protein and also be sufficiently fat and sweet to be palatable the food materials were selected from the following groups, which are represented in all well-chosen diets.

Group 1. Those in which protein provides a larger percentage of the fuel than it does in the diet as a whole. These include milk, cheese, eggs, and most of the flesh foods.

Group 2. Those in which fat provides a larger percentage of the fuel than it does in the diet as a whole. These include butter, cream, oil, fat meats, and egg-yolks.

Group 3. Those in which starch provides a larger percentage of the fuel than it does in the diet as a whole. These include cereals and potatoes.

Group 4. Those in which sugar provides a larger percentage of the fuel than it does in the diet as a whole. These include sugar (cane and maple) syrups, honey, candy, figs, dates, raisins, and other dried fruits.

² Figures based on Bulletin 185, Office of Experiment Stations, U. S. Department of Agriculture, and Food Products, by H. C. Sherman.

Group 5. Those in which mineral matter and mild acids are large in amount, as compared with fuel value. These include fresh vegetables and fruits.

The foods in each of the above groups which contain most iron are:

Group 1. The lean portions of lean flesh foods which have little fat between the fibers, particularly round of beef without visible fat and certain other cuts of beef; veal; lamb; chicken; cod; haddock; white fish; and others.

Group 2. Egg-yolks.

Group 3. Whole wheat preparations, oatmeal, and potatoes.

Group 4. Dried fruits, particularly figs, dates, and raisins.

Group 5. Spinach, dandelion greens, string beans, lima beans, asparagus, cabbage, lettuce, celery, pineapple, strawberries, huckleberries and grapes. All fruits and vegetables are in fact good sources of iron; not so much because they contain more pound for pound than many other food materials, but because they contain so little besides that they can be eaten in almost unlimited quantities without affecting greatly the fuel value of the diet. This is especially true of the succulent vegetables ordinarily used for salads but also to a great extent of other vegetables and of fresh fruits, though the latter have a higher fuel value owing to the sugar they contain. Though all the vegetables are good sources of iron, spinach occupies a place by itself, having 2 or 3 times as much, per 100 calorie portion, as any other.

It may be noted that the foods chosen for the above ration were the highest in their respective groups, with the exception of string beans which were used in place of spinach because of personal preference.

This diet may be brought up to ordinary fuel value by the addition of butter, sugar, and potatoes in the amounts usually eaten. Even if the calories were raised to 3000 by means of the addition of foods which, like those mentioned, contain little or no iron, there would still be 1 milligram of iron per 100 calories, or twice as much as in the ordinary mixed diet.

SUGGESTIONS FOR USING THE IRON-RICH FOODS^a

The common uses for the iron-rich foods mentioned above will occur to all who are in the habit of preparing meals; they need only to be mentioned here. The more unusual uses are simply modifications or extensions of the common uses.

^a Recipes for the use of these foods will be found in the Homemakers Department.

Egg yolks contain practically all the fat of the eggs and a large amount of protein. They may, therefore, be used for thickening and also for enriching soups, sauces, and other dishes. It is common to use them for these purposes in addition to flour and butter, and, where a large amount of iron in the dish is an object, they may be substituted altogether for these other materials. Each egg yolk contains 1.5 milligrams of iron.

Meat and fish can be freed from fat, which contains very little iron, and either chopped and mixed with egg yolks or served with egg-yolk sauce (see recipe for iron-rich sauce). This sauce, which is capable of endless variation by the use of different flavoring materials, can be served either hot or cold. It can be served on vegetables as well as on meats and can be used as a salad dressing. Simpler salad dressings can be made by seasoning egg yolks, either raw or hard-cooked, with pepper, salt, and vinegar or lemon juice.

Egg yolks may be satisfactorily scrambled if mixed with water in the proportion of 1 tablespoonful to each yolk. No additional fat is needed in cooking them. Croquettes of hard-cooked eggs may be made by mashing and seasoning them and adding enough raw egg to "bind" them. The use of hard-cooked egg yolks as a garnish for cream toast is familiar to all. A larger use of the egg yolk in this dish is, of course, practicable.

Boiled and baked custards, either sweetened or unsweetened, may be made with the yolks of the eggs only, and with either milk, meat stock, or water as the liquid. The custom of serving with soup firm custards cut into fancy shapes is familiar to all. Such custards may be introduced into the diet in far larger amounts by using them with bread in place of butter or cheese.

The amount of greens introduced into the diet may be increased by chopping them very fine and using them in soup. They may be put through the food chopper with whole wheat or graham bread to absorb the juice, and cooked in water, meat stock, or milk. For variety chopped greens may be added to the milk sauces which are frequently served on toast and with croquettes, omelets, and other dishes.

There are many common ways of using dried fruits. They may be cooked with cereals or served with them. Boiled rice with stewed dates and cream, either whipped or unwhipped, makes an attractive and wholesome dessert. Chopped dried fruits may be used as a filling for sandwiches or cake. A very thick layer of chopped fruit between thin layers of whole wheat bread makes a good substitute for cake.

SOME COLORED SCHOOLS OF THE SOUTH

KATE BREW VAUGHN

Twenty years ago many negroes of the south opposed any measures introduced in the schools which tended to improve domestic service or living conditions in their own homes, the opposition being founded on what they considered the desire of white educators to keep them in servile positions. That a radical change of view has taken place is evidenced by the enthusiasm and earnest endeavor one meets in all types of schools where Home Economics is taught.

Recently, in making a lecturing tour through Virginia, North and South Carolina, Alabama, and Tennessee, I was much interested in the development of negro education along these lines. The principal of colored schools at Winston-Salem invited me to talk to his girls and teachers and I spoke of the necessity of every honest woman knowing intimately all those things that affect her home life, namely, cookery, cleaning, sewing, buying, and nursing, and where it was necessary to earn a livelihood in one of these callings, of the value of technical as well as practical knowledge, urging upon them the standardizing of household tasks as a means of securing better wages. The talk was followed by one from their principal who outlined the history of the work in his school. Eight years ago, upon taking charge of a student body that seemed interested rather superficially in the subjects of study, he decided to open a kitchen, a sewing room, and a laundry to fit the girls and boys for employment. A few boys, and fewer girls, applied. He then required every girl to enter the classes, but the sewing classes were filled and cooking and laundry classes went begging. The School Board finally decreed that every girl who failed to give the required amount of time to cooking, sewing, and laundry, would be dismissed. Teachers were added, equipment installed, classes enlarged, and the results as indicated by the general tone of the school, sensible dress, cleanliness, and health must be gratifying to the school authorities.

In Winston-Salem and other towns I came in contact with schools conducted by gas and other public service companies. The Winston-Salem Gas Company found that, through fear of gas equipment or lack of training, domestic workers were not using gas successfully. Mrs. Jos. B. Smith inaugurated a cooking school which house workers could attend once a week for twelve weeks, learning the fundamentals of plain cookery and the use of gas appliances. The success was so

great that a regular teacher, Miss Ruth Giersch, a graduate of Winston-Salem Academy, was employed. Now she has two classes weekly for colored workers and two classes weekly for white housekeepers.

At Charlotte, North Carolina, the Southern Public Utilities Company has for four years conducted a school of cooking under the direction of Miss Pearl Hislop who has a kitchen equipped for twelve, with colored cooks, especially the younger women, attending afternoon sessions four days a week.

The most elaborate of these free schools operated by gas companies is probably that opened at Roanoke, Virginia, July, 1915, under the direction of Mrs. Eugene Taylor, a graduate of Hampton Institute, who teaches cooking, sewing, and housekeeping, and aims especially to aid colored girls and women in service. All girls over fourteen are eligible. The course was immediately popular, and in October it became necessary to employ an assistant, Miss Letitia Kyd, a graduate of Virginia Normal and Industrial Institute of Petersburg, being chosen.

When application for entrance is made a card is filled giving name, age, address, and past service, and after completing the course the record of the pupil is added. This card is filed in the gas company office where the housewives may obtain an efficient employee. Daily record is kept of attendance and those who are delinquent are warned and sometimes finally expelled. After a full course, covering six months, a certificate of efficiency is given the student. In order to arouse interest, prizes are offered from time to time for attendance or proficiency. At present this school is excellently equipped. Last year the Board of Education turned over to the Roanoke Gas School 87 school children for instruction, and there is also an enrollment of 175 students from homes of housewives of Roanoke who are taking 2 lessons per week. Average attendance of 140 shows the interest taken.

In June 1916 the commencement exercises of the Roanoke Gas Company School took place in a large hall, and had an interested audience of citizens, white and colored. The effects of the school are apparent in the living conditions in colored homes and the increased efficiency and contentment of house workers. There has seldom been a movement more productive of good results; and it is safe to say 1916-1917 will find the commodious rooms taxed to capacity by the students ready to enlist. In many towns in the south the same is true, and the gas companies are not only advertising their own business but materially and practically assisting in dignifying domestic service.

Many denominational schools for colored students are emphasizing Home Economics. At Raleigh, Shaw Institute gives no inconsequential place to this course. The cookery classes prepare all the food used for the student body of 500, and do the laundry work as well. In Charleston, South Carolina, a well equipped manual training school for colored boys and girls, gives excellent training in cookery, sewing, and laundry work. The pupils who have attained a certain standard in the latter, may bring from home a wash and, by paying for the fuel and material used, may do that as practice work. In many instances the girls make from two to three dollars a week by this method. This wage compares favorably with the weekly wage received by adults who do general housework in the same city. At Raleigh, North Carolina, one of the colored churches, through its pastor, Rev. Perfect Dewberry, has equipped the basement with gas stoves, the gift of the gas company, and, through the coöperation of the Woman's Club, the newspaper, and the special interest of Mrs. W. N. Hutt of the *Progressive Farmer*, they have a teacher for instructing women not eligible to public schools, and those wishing to become more efficient house workers. This school is still young, but the prospects for the future are very bright.

In many towns I had a morning session once a week for the colored house workers and the pathetic side of the middle-aged employee, and the "know it all" of the partially-educated younger woman, was always offset by the extreme good humor and kindliness of heart of the entire body.

I remember one day in Columbia, South Carolina, the house workers came wearing their caps and aprons and presenting at the door the visiting card which was to admit them. In order to get their coöperation I told of the influence on a family of a trustworthy worker and tried to paint very vividly the bad results on growing children of illy prepared meals, a poorly cleaned house, and untidy habits of the employee. I told of a particular case of a club woman whose ability to represent different movements often caused her to be sent to different cities as delegate. On these occasions old Mary, a beloved black mammy, was left in charge and often found it hard to keep in good health and good humor the head of the house and the children too. One morning after the return of "Miss Bettie" (as the lady was known to her mammy) from a Missionary Conference where her report had made a fine impression, she was holding a telephone conversation with her pastor, and Mary heard snatches of conversation like this, "O, yes,

I'm so fortunate in being able to go," and "I feel that this work will put stars in my crown," and other expressions of complacency. After turning from the 'phone Mary said, "Miss Bettie, you may get that crown, but I shore know old Mary goin' get some of the stars out of it fer taking care of your business while you travels about." It touched a familiar chord in many breasts and a chorus of "Yes," "That's right" was prolonged by one enthusiastic "mammy" into a real "shouting."

The plaint of the majority of the colored domestic workers is the lack of definiteness of their tasks. As one colored man said to me, "The mistress wants the servant to wait on table, answer door, cook, wash, and scrub, and still keep sanitorium." It will be only through education along lines of domestic service, coupled with literary studies, that the standardization of domestic service will be brought about, and this standardization will do as much for the homes as for the income and contentment of colored women.

THE ESSENTIAL QUESTIONS.¹

Nothing in Home Economics, no plan, nor device, no isolated fact, is important except as it is related to the essential purpose of the home. No woman can rightly or wisely administer a home unless she has a clear sense of proportion and keeps her orientation. The thing which is always and forever essential should be perfectly clear to her. The tricks and fashions and devices which add to our convenience for a moment should be brought to their proper places in our thinking. Use them, of course, if they help the cause for which the home was founded. Toss them away in an instant, as on the frontier, or even in camping, when they are not essential to the larger life; and give your chief thought to the big questions—What is the home for? How can it be made to minister to the growth of the children within its walls?

¹A quotation from an address by Sarah Louise Arnold at the meeting of the General Federation of Women's Clubs, New York City, May, 1916.

HOME ECONOMICS DAY, 1916

SUGGESTIONS BY THE HOME ECONOMICS DAY COMMITTEE

With the approach of December we are reminded that the third day of that month is Home Economics or Richards Day, set apart by the Home Economics Association and the Trustees of the Richards Memorial Fund to perpetuate the memory of Mrs. Richards and the other pioneers of the Home Economics movement. The originators of this day hoped that it would become customary to celebrate it in schools, classes, and clubs interested in Home Economics; in their idea it might serve as a time both for exercises commemorative of Mrs. Richards or some particular phase of Home Economics, and for making especial effort to raise money for the fund. As all readers of the JOURNAL should know, the income of this slowly-growing fund (which now amounts to about \$4000) is to be used to help the cause which Mrs. Richards did so much to foster.

The committee of the association in charge of its observance sincerely hopes that the celebration this year will bring in a substantial addition to the fund, and also that, whether it is planned to bring in money or not, it will be more general than before, and will mark an important step towards a recognized custom among all interested in Home Economics. If nothing special can be done in the way of a celebration, there might at least be some commemorative mention of Mrs. Richards' life and work at some public exercise of every school which teaches Home Economics.

If a more elaborate celebration is possible, the suggestions made in the JOURNAL last year¹ are still worth considering. They included tableaux such as "Preparing Dinner in Olden Times," "In a Colonial Kitchen," "Dinner in Camp During the Revolution," "Pioneers at Supper on the Trail," "An 1876 Tea," "A Corner in the Rumford Kitchen at the Chicago Exposition, 1893," or a series of pictures from "A Dream of Fair Women and Their Work in the Home." The suggested tableau of the Rumford Kitchen might serve as the central point of a brief account of not only that interesting experiment but also of such similar ones as the New England Kitchen established in Boston in 1890. Material for this is found in Miss Hunt's *Life of Mrs. Richards* and in the

¹ Vol. VII (November 15), No. 9, pp. 491-493. Reprints of this may be obtained from the JOURNAL office.

Rumford Kitchen Leaflets (see List below). The leaflets also contain a sketch of Count Rumford's life and work from which a talk appropriate to Richards day can be prepared. There is also the leaflet on Count Rumford published by the Association.

Last year's suggestion for loan exhibits of the fancy work of several generations, or, if preferred, an exhibit of table and cooking utensils, or any other household goods arranged to show their gradual development through the periods represented is well worth trying.

Another appropriate celebration might consist in a competition in any household art which the current work of a class makes desirable. Bread or cake making; planning menus with reference to economy, nutritive value, and agreeable flavor combinations; or some branch of sewing or handicraft are obvious subjects. It would perhaps suit the spirit of the day better if in such competitions the social and economic importance of the work could be emphasized rather than mere skill—and, of course, it would be more popular if some interested friend could be persuaded to offer a small prize. If it is impossible to hold such a competition on December 3, it could at least be announced on that date and its relation to Richards Day explained.

Since last year several plays with Home Economics bearing have come to light. Besides our old friend "Prince Caloric and Princess Pieta," there is "Omelet and Oatmelia," given with so much success at the Cornell meeting of the Association last July, and five little playlets, especially good for the elementary school—"Mother Goose Up-to-date," a health playlet; "Judith and Ariel," a fresh air playlet; "Our Friends the Foods," a food playlet; "In a Tenement," a tenement playlet; and "Killing Giants," a juvenile court playlet—by Miss Hester D. Jenkins, for the Brooklyn Bureau of Charities.² There is also the pageant "America's Gifts to the Old World," prepared for the Memorial Fund Committee and published by them for the benefit of the fund last December. Even if this is too elaborate to be used as a whole, individual scenes or dances might be used, many of them especially easy and attractive to arrange in the late autumn. A list of these plays and other material, which might be helpful in preparing a suitable observation, is given below:

Life of Ellen H. Richards. By Caroline L. Hunt. Whitcomb & Barrows, Boston, Mass., 1912. \$1.50. By mail of the Journal, \$1.62.

² See review in the JOURNAL for April, 1916, VIII, No. 4, p. 209.

- Rumford Kitchen Leaflets. Ed. by Ellen H. Richards. New ed. Whitcomb and Barrows, Boston, Mass., 1904. (First six papers reprinted from American Kitchen Magazine.)
- Leaflets on Life of Ellen H. Richards, Count Rumford, Catherine Beecher, and Xenophon. American Home Economics Association. \$0.10 for four in one order. Also a special sketch of Count Rumford. \$0.05.
- Home Life in Colonial Days. By Alice Morse Earle. Macmillan and Company, New York City, 1913. \$0.50.
- Social Life in Old New England. By Mary C. Crawford. Little, Brown and Company, Boston, 1914. \$2.50.
- The Goede Vrouw of Mana-ha-ta at Home and in Society 1609-1760. By Mrs. VanRensselaer. Charles Scribner's Sons, New York City, 1898. \$2.
- America's Gifts to the Old World—A Pageant or Masque for Home Economics Students. By Helen W. Atwater and C. F. Langworthy. Publication of the Richards Memorial Fund, American Home Economics Association, Baltimore, 1915. \$0.50. Five or more copies \$0.35 each.
- Prince Caloric and Princess Pieta. Publication of the Richards Memorial Fund,, American Home Economics Association. \$0.25.
- Omelet and Oatmelia. By Ona Winants Borland. Dramatic Publishing Company, 542 S. Dearborn St., 1915. \$0.25.
- Five Playlets. By Hester D. Jenkins. P. J. Collison and Company, Brooklyn, 1915. \$0.25.

The Committee on Home Economics Day would be greatly helped in making suggestions for the celebration of the day in 1917 if teachers or other leaders who work out programs this year would send on to it reports of their celebrations—be they simple or elaborate, long or short. In this way the Committee (which may be addressed in care of the JOURNAL OF HOME ECONOMICS, 1211 Cathedral St., Baltimore) could pass on to others the benefit of these experiments.

INTERNATIONAL INTERESTS IN HOME ECONOMICS

BENJAMIN R. ANDREWS

Chairman, International Committee on Home Economics, Teachers College, New York City

The International Committee on Home Economics of the American Home Economics Association presented a report of progress at the Cornell meeting which will be printed in full in the *Proceedings* of the Association. Several of its items will be of interest to all JOURNAL readers. The International Committee was appointed in response to the request of Home Economics teachers meeting in New York in May, 1915, that the Association provide an agency to encourage the introduction of Home Economics into schools and colleges in foreign countries, especially into missionary schools and colleges, and an agency for developing interest among American teachers in the world-wide progress of Home Economics as an international factor. Some of the committee's work is suggested here.

The Canton Christian College of China which is regarded as doing some of the soundest educational work in China is interested in the organization of a Home Economics department. This college has on its staff Miss Liu, a graduate of Vassar and of Columbia, who has organized its first girls' high school class of a dozen girls, graduates of the College elementary school, who will become its first college class. Miss Liu's work is supported by Vassar students and alumnae. As the women's work develops it is intended to add an American young woman teacher of Home Economics, and the support of such a teacher might well be made a matter of special contribution by members of our Association who would be interested in such an enterprise. At the Canton College there has been held for several years a summer school of household economics which has been taught by American women, teachers and the wives of the faculty members of the college.

The International Committee hopes to have a visit made to the Canton institution by a member of the Home Economics faculty of one of our American colleges on leave of absence, within a year or two, to aid in establishing Home Economics teaching there. The Committee has received offers of such temporary service, at Canton or elsewhere, from three American college teachers when conditions permit them to have leaves of absence. Others it is hoped may volunteer such services.

The Educational Secretary of one of the leading missionary societies has assured the committee of great possibilities in the service given by leading American teachers willing to contribute a few months service to the development of these centers of education in countries to which modern civilization is passing.

Another possibility worthy of serious consideration is the temporary exchange of teaching positions by American and European teachers of Home Economics when the war shall have finished. The exchange of college professorships and secondary teachers was under way between America and several countries before the war. Home Economics teachers had not participated in the plan. There is every reason why they should. The home as a central social institution varies somewhat in its position in different countries but in all it is fundamental. A better understanding of each other's homes and household economy would be one factor in a better international understanding; and as the home is a determining factor in the standard of living, we should be doing our share toward the leveling up of standards of living in all countries.

Your committee has proposed to make an inquiry as to Home Economics instruction in Pan-American states, and has sent out the first letters of inquiry. As rapidly as possible it suggests that such communication be opened with various countries to the end that American teachers of Home Economics may know of striking items of progress in other countries, and that we may communicate to them similar intelligence regarding the American movement in education for the home.

We recommend that where possible our Association be represented by delegates at foreign congresses which treat of Home Economics topics and that the sending of American papers to their programs be encouraged; and that members of the Association who plan to travel abroad, or would be interested in serving as exchange teachers in Oriental or European countries communicate with the committee.

The membership of the Committee now includes Miss Catharine J. MacKay, Mrs. Mary Schenck Woolman, Miss Helen Atwater. Persons who are interested in this work are asked to communicate with the Committee.

FOR THE HOMEMAKER

THE MAKING OF A HOME LIBRARY

MARTHA F. EMERSON

Librarian of New Hampshire College

A subject like this, because it is so broad as to be indefinite, must of necessity contain quotations from readers much wiser and more experienced than I, and must also, if you will pardon it, even include some bits of autobiography.

In the attempt to make the subject more definite, I have divided it into four headings—but I do not promise to follow them with precision.

1. Why should one have a home library in these days of many public libraries?
2. Why is it important to cultivate a love of good reading?
3. What not to have in a home library.
4. Along what lines shall we build up our home library?

I

Pride in possession is a very strong trait in human beings, and, if rightly exercised, is a valuable trait. As with other possessions, those books which we have bought or chosen or acquired by gift from friends have a value, even a personality, of their own which no other books have.

The public library can never take the place of the collection at home, books we can pick up at any moment, which we know thoroughly, and which have helped us through varied moods and experiences. Then, too, books furnish a room as do few other things; that is, if one is careful to have those that look readable rather than the so-called gift-books with absurdly ornamental covers. We have high authority for placing this kind of value upon books. Cicero described a room without books as a body without a soul.

Lastly, books we own we know as we can know few others, and to know a good book thoroughly is a great help toward education.

II

The reasons why it is important to cultivate a love of *good* reading seem sufficiently self-evident, yet it is worth while to remind ourselves of some words of various authors.

Frederic Harrison, a wise critic, says:

Men who are most observant as to the friends they make or the conversation they shall share, are carelessness itself as to the books to whom they intrust themselves and the printed language with which they saturate their minds.

Ralph Waldo Emerson's three rules for reading are as follows: "1. Never read any book that is not a year old. 2. Never read any but famed books. 3. Never read any but what you like." To many of us the third rule would seem to make the other two impossible!

Bryce says:

One of the commonest mistakes we all make is spending ourselves on things whose value is below the value of the time they require.

James Russell Lowell says:

A college training is an excellent thing; but after all, the better part of every man's education is that which he gives himself, and it is for this that a good library should furnish the opportunity and the means. . . . I know that there are many excellent people who object to the reading of novels as a waste of time, if not otherwise harmful, but I think they are trying to outwit nature. . . . Let us not go about to make life duller than it is.

Thus do various authors emphasize the fact that the taste for good reading is fundamental for culture, for education, and for the development of true character.

III

Our third heading, "What not to have in a home library," is a much more delicate matter upon which to speak, and one who is so bold as to attempt it must expect to hurt some one's feelings by criticising old favorites, but there are a few obvious pitfalls against which one may give warning. Never buy books by subscription; very, very rarely of an agent, and do not trust too implicitly the book reviews by publishers.

Be sure to avoid immoral books; that is easily said, but opinions differ so widely as to what constitutes immorality in a book that it is more easily said than done. In a recent thoughtful article on "What makes a novel immoral," Miss Corinne Bacon says:

The word morality must not, as is often the case, be narrowed down to the equivalent of sex morality. . . . A novel may have nothing objectionable about it, so far as its love affairs go, and yet be a thoroughly immoral book. For morality includes the whole of life, not simply one relation. Humanity is broader than sex, and all of our relations to each other as men and women are moral relations. So the moral novel, it seems to me, must deal truly with the whole of life.

An immoral book is one whose tendency is to lower the best moral standards, to hold up to contempt or ridicule or in other ways to degrade one's ideals, to confuse issues.

Again Miss Bacon says:

Among immoral books are those which make a direct appeal to our lower nature. Here I would include novels written to pander to race prejudice and hatred, such as some of Thomas Dixon's; novels that glorify the lust for wealth (such as Chester's *Get-rich-quick Wallingford* stories); novels that enthrone the animal over the spiritual nature, setting passion above principles, even to the point of exalting passion into a rule of life.

I once heard a clever woman characterize a certain popular novel as "a book no good daughter would want her mother to read."

Avoid books which confuse right and wrong. Of such books are the Hornung Raffles stories which make of burglary a stunning lark, and, according to police records, have actually led some young boys to attempt such forbidden and dangerous joys.

Then we come to the mediocre books, and here I realize that I enter upon the most delicate part of my subject, and again I take refuge in the safety of quotation, but I have the courage to say that although the words are quoted, the thought exactly coincides with mine.

Mediocre books include among novels, all that class known as "harmless" and "old favorites." Here we find those "perfectly lovely" stories of Mary J. Holmes, those "grand" books of Mrs. Southworth, E. P. Roe's stories, so inanely noble and so impossibly pure—and will future librarians class here those "sweet" books of Mrs. Barclay, Harold Bell Wright, and Gene Stratton Porter? I wonder.

Another critic classes Florence Barclay's books among the "Slushy and debilitating novels—the spineless literature of warm and damp affection." Does that seem too severe? Then remember that books, though called harmless, are not harmless in so far as they weaken us mentally. Unused minds, like unused muscles, grow weak. As Charles Dudley Warner says:

Novels which move in a plane of absolute mediocrity, and have the slightest claim to be considered works of art represent the chromo stage of development.

In buying books for children—and surely that is a very important object in building up a home library—be careful, especially just before Christmas, not to take on trust everything that is offered as juvenile; try to select and choose with discrimination; do not include those which abound in brutal, horrible or disgusting details, those which are full of gross exaggeration, those which are untrue to life and those which, according to Miss Agnes Repplier, are "little Pharisees in fiction."

You will ask, "If there are so many books to avoid, what then can we buy?" Fortunately there are many, and an increasing number of healthy, wholesome, thought-producing books, and that brings us to our fourth heading.

IV

Along what lines shall we build up our home library?

Manifestly and most emphatically along the lines of mental and moral strength. We have sometimes heard the expression, "Books that leave a good taste in one's mouth," and life is too short and most of our incomes are too limited for us to afford to own any other kind. This does not shut out everything except the so-called "pleasant books," but does include only those which are worth while for some happy thoughts they give us or some lesson they teach.

In gathering a library for children remember no child above babyhood is too young to enjoy picture-books, but be careful to buy such as help train the eye to an appreciation of good color, harmony, and line. Give small people who love funny things the Palmer Cox, Gelett Burgess and Peter Newell type of grotesque drawings, and thus lead them away from the Buster Brown and Foxy Grandpa variety of so-called humor.

The telling of stories is a great delight to children from a very early age, and the wise parent knows and tells the old standbys, loved by

many generations. We have many convincing proofs of the power of books read in the home. Older people miss a very great opportunity if they do not make themselves companions with the children in the home by means of famous stories and poems read and re-read, told and re-told. After awhile the cheap and sensational stories lose their charm if home influences have helped children to discriminate and strengthen their mentality. Warner says:

Whatever the beginning is, it should be the best literature. The best is not too good for the youngest child. . . . It requires . . . little more pains to create a good taste in reading than a bad taste.

As an aid in buying books for children and in building their love of good reading, I could not recommend a better book than one called *The Children's Reading*, by Frances Jenkins Olcott. It is full of sane and helpful suggestions.

The following rules, taken from a recent library publication (*Public Libraries*, January, 1916), are also helpful:

No older person should give to a child a book that he has not read or does not know all about. One should not be deceived by low price, attractive cover, or the fact that the boy or girl is eager for the book. Ask yourself as you read the book: Does the story lay unnecessary stress on villainy, deception, or treachery among young people? Are all its incidents wholesome and probable and true to life? Does it show young people contemptuous towards their elders and successfully opposing them? Do the young people in the book show respect for teachers and others in authority? Are the characters in the story the kind of young people you would choose as companions for the children you love? Does the book describe pranks, practical jokes, and pieces of thoughtless mischief as though they were funny and worthy of imitation? Is the English good and the story written in good style?

I wish here to record a special plea for books for young girls in their teens, that most difficult and misunderstood of ages. For them get books of the type of Louisa May Alcott, Susan Coolidge and Charlotte M. Vaile. They are old books, I know, and have many worthy successors, but they are perennially fresh and wholesome. I vividly remember how much they meant to one young girl at the "awkward age."

But, indeed, when for young people of all ages we have such books as *Rip Van Winkle*, *Treasure Island*, *Little Women*, *Ivanhoe*, *Howard Pyle's Men of Iron*, *Uncle Remus*, and poems and fairy stories, and

many others too numerous to mention, what excuse have we for buying the weakly sentimental, or even the less good?

Children are quick to detect the affected and unnatural. I remember one character named Phoebe in a little Sunday school book I used to read, called *Helps Over Hard Places*. Now Phoebe had red hair and an unnaturally saintly disposition. Her brothers used to tease her unmercifully, pretend to warm their hands at her hair, pull up all her best bulbs in her garden, and otherwise ill-treat her after the manner of many brothers both in and out of fiction. But Phoebe, in the whole course of the story, never once "got back at them," but silently wept and then did them some favor. Phoebe always provoked me, and to this day in my family "don't be a Phoebe" means "don't be unnaturally and ostentatiously good."

Two of my chief childhood treasures were Foster's *Story of the Bible*—not because I was a "Phoebe," but because I loved the stories and the pictures (and, by the way, that book deserves to be a classic and to be accessible to all children. In my case it seemed to make Abraham and all the Patriarchs my personal friends, while their adventures were the most thrilling events); and *The World at Home*, by the Sisters Kirby, which, at my will, brought to my door the reindeer of the North and the crocodile of the South, and made me feel a much-travelled young person. I read those books from cover to cover and out of their covers. I tell these things to prove that children need not necessarily be fed upon fiction all the time.

The adult shelves will be made up of a mixed collection, but if we have in mind our basic principles of increasing our mental strength and character along with our pleasure, we cannot go far wrong. If we have on our shelves good biographies, and travel, some essays, plenty of poetry and good fiction and science, and technical books and periodicals to suit our special interest who can say we have not a well-rounded home library.

One wise lover of books says, "Books may be divided into three classes: first, acquaintances; second, friends; and, third, intimates."

Let us choose our books as we would our acquaintances, our friends, and our intimates.

RECIPES FOR IRON-RICH DISHES¹

CAROLINE L. HUNT

AN IRON-RICH SOUP

- | | |
|---|-----------------------------------|
| 2 heads of lettuce or an equivalent amount
of the outer and tougher leaves | 4 cupfuls of meat stock or water. |
| 1 thin slice of onion | 6 egg yolks |
| 3 slices or 3 ounces of whole wheat or gra-
ham bread | Salt |
| | Lemon juice if desired |

Put the lettuce and onion through a meat chopper with the bread to absorb the juice, cook twenty minutes in the water or stock, thicken with the egg yolks and season. Or cut the lettuce into small pieces, and after cooking put it through a sieve. In thickening the soup beat the yolks well and mix them with a little of the hot liquid before putting them into the remainder of the liquid. After the yolks are added heat the soup only enough to thicken it; not enough to curdle it. A double boiler may be used to advantage in making this soup.

Spinach, kale, cabbage, or almost any other vegetable may be used in the same way. Such soups are good food for anaemic children. It should be possible to get very cheap the outer leaves of lettuce that the market man takes off in making lettuce-hearts.

The iron in the above soup, exclusive of that in the meat stock, is about 12 milligrams.² If made with spinach it contains 14 or 15 milligrams.

IRON-RICH MEAT CAKES

- | | |
|---------------------------|-----------------------------|
| 1 pound of round of beef. | 1 teaspoonful of salt |
| 3 egg yolks. | A few drops of onion juice. |

Remove all fat from meat and chop lean portion. Add well-beaten egg yolks and seasonings, form into cakes, handling lightly, and broil. Or bake in a hot oven. The iron in the above is about 20 milligrams; iron in same weight of meat cakes made without removing fat and without egg yolks is about 13 milligrams.

BAKED FISH WITH IRON-RICH SAUCE

Cut bass or halibut into fillets weighing 4 ounces or less. Salt and pepper them, place in a greased pan, cover with a greased paper and cook 15 minutes in a hot oven. Serve with the following:

¹ For the choice of iron-rich foods see pages 584-587.

² One milligram equals .000035 ounce.

IRON-RICH SAUCE

6 egg yolks	$\frac{1}{2}$ cupful of water
3 teaspoonfuls of lemon juice	$\frac{1}{2}$ teaspoonful salt.

Mix the ingredients by stirring rather than by beating, and cook over boiling water until thick, stirring constantly. Served hot on meat or fish and cold on salads. The iron is about 9 milligrams; iron in oil salad dressing, none.

Thoroughly chilled asparagus with hot sauce makes an extremely palatable dish. Spinach cooked, chopped, seasoned, and molded into individual portions may be served cold with the above sauce. The addition of hard-cooked egg yolks raises the already high iron content of this dish. They may be sliced and laid in the bottom of the mold or put through a ricer and sprinkled over the spinach after it is turned out of the mold. Or all such refinements of serving may be omitted, if it is not necessary to tempt the appetite.

SAVORY IRON-RICH SAUCES FOR MEAT OR FISH

To the above sauce add capers or finely chopped chives, parsley, pickles, or olives; or add horseradish, anchovy sauce, or tomato juice boiled down till thick; or use tarragon vinegar in making the sauce instead of the lemon juice. Some of these must be omitted, of course, in the case of persons of impaired digestion.

IRON-RICH SUBSTITUTE FOR BUTTER

4 egg yolks	$\frac{1}{2}$ teaspoonful of salt
$\frac{1}{2}$ cupful of water	

Mix the ingredients and pour into a cup, set in hot water; cover and bake in a moderate oven until firm.

The iron is about 6 milligrams; iron in butter, none.

IRON-RICH SUBSTITUTES FOR CHEESE

To the ingredients in the above recipe add 2 teaspoonfuls of lemon juice and a few drops of onion juice, or $\frac{1}{2}$ teaspoonful of finely chopped chives. The iron is the same as in the iron-rich substitute for butter; iron in cheese, practically none.

IRON-RICH SUBSTITUTE FOR CREAM

A custard made with egg yolks may be used on fruit in place of cream. It is particularly palatable served very cold with stewed plums.

IRON-RICH SANDWICHES

No. 1. Between two slices of whole wheat bread put crisp leaves of lettuce and hard-cooked egg yolks mashed and seasoned with salt and lemon juice or vinegar, or with the iron-rich salad dressing. If made with $1\frac{1}{2}$ ounces of bread, 1 ounce of lettuce, and 2 egg yolks, this contains about 4 milligrams of iron.

No. 2. On a slice of whole wheat bread toasted on one side lay a leaf of lettuce spread with salad dressing and a thick slice of the butter or cheese substitute. Eat with a knife and fork as you would a club sandwich.

AN IRON-RICH SWEET

Chop and mix together equal weights of dates, dried figs, and seeded raisins. Buy for the purpose figs intended for cooking purposes. Soften them by washing and drying them in a slow oven. This mixture may be used in place of marmalade at breakfast, as a filling for sweet sandwiches, or as a substitute for candy. For the last purpose roll it out and cut into pieces the size of small caramels. This candy may be wrapped in paraffine paper or served in paper cases. Or the pieces may be rolled in powdered sugar. This is a good form of sweet for children or for any person suffering from constipation.

The iron in 1 pound is about 16 milligrams; iron in 1 pound of sugar or ordinary candy, none.

IRON-RICH ICE CREAM

$\frac{1}{2}$ cupful finely chopped dates
 $1\frac{1}{2}$ cupfuls of water
6 egg yolks

$\frac{1}{2}$ teaspoonful of salt
 $\frac{1}{2}$ cupful orange juice

Cook the dates and the water for half an hour in a double boiler. Beat the yolks of the eggs and pour the cooked dates over them. Return to the double boiler and cook until the mixture thickens. Cool, flavor, and freeze.

STAMMERING, AND ITS CORRECTION IN THE HOME

ERNEST TOMPKINS, M.E.

"A penny saved is a penny earned." This adage applies to one hundred dollars—the standard price for correcting stammering—as well. Indeed, in this application it is emphatically expressive, for most of the money spent for the correction of stammering is thrown away and the stammering goes right on—often to the grave. So it is necessary, not only for the economy of money but also for the economy of suffering, to stop the disorder at its inception.

Some one may say, "Oh, my child does not stammer; I am not interested." If your child is under twelve he may stammer yet; and if your own child does not stammer your grandchild or great-grandchild may, for stammering, like the poor, is always with us, and it is distributed with considerable uniformity. It is a common menace, and every one should take an interest in its suppression.

The home treatment involves two simple elements: (1) kind but firm prohibition of the defective speech; (2) the encouragement of spontaneous speech, as by reading in concert, speaking in concert, repetition of short sentences, repetition of poetry. Any effective treatment must be on these same principles. Skillful treatment will hasten the recovery; but outside treatment is unnecessary if the home treatment is begun at once.

Decrease as much as possible the inducing causes of stammering. These are practically all of one kind; namely, temporary speech interruptions. The variety of these causes is large.

Stuttering—clear repetition—is an avoidable cause of stammering. Stop it at once. Slow talking is the corrective for stuttering; but not for stammering.

Imitation of stammering is a prolific cause of stammering. Stuttering may run for weeks before it develops into stammering; but the imitation of stammering may "catch" very quickly; so it should be stopped even more promptly than stuttering.

Association with stammerers sometimes has the same effect as direct imitation. If your child attends a school in which stammerers are required to recite orally you should notify the school authorities that you want your child protected from the infection of stammering just as much

as they would protect it from any other infection—diphtheria, measles, or whooping-cough. That can be accomplished by prohibiting stammering on school property: the stammering child should be required to write its recitations and anything which it cannot say freely. If a neighborhood playmate stammers, he should be required to restrain his stammering speech or be “sent to Coventry.” If he is required not to make the spasmodic speech effort, but to calm himself and speak, or to make signs or to write or to “let it go” he is not a dangerous companion, particularly if his playmates are cautioned not to imitate him; and it is hard on the little stammerer to have to play alone.

Most of the remaining inducing causes of stammering are illness, fright, physical shock, extreme exhaustion, cruelty. All these things produce broken speech, and the stammering arises from the child's conscious efforts to mend that broken speech. Convulsions and fainting fits are very likely to be followed by stammering. These dangers should be attacked from both front and rear. Eliminate as much as possible frights—false faces, ghosts, jumping from behind doors, locking in dark closets—also harsh treatment, tickling, hysteria, undue exertion. However, some of the causes are unavoidable.

Begin the prohibition of the stammering just as soon as it appears. Watch the recovering child's speech as carefully as his pulse or his temperature; and at the least evidence of spasmodic speech impose silence until normal speech returns. If stammering does get a start tell the child that it has nothing to fear; but when it feels the inclination to stammer it is to wait and calm itself or to remain silent. Refrain from questioning it, except when the questions are put so that they may be answered by a sign of head or hands. Relieve it from all required speech. Its normal speech will gradually return.

Mr. Tompkins has made a special study of stammering, and embodies here the views of noted European as well as American authorities. He has published articles on this subject in *Education*, Feb., 1916; *Scientific American Supplement*, Feb. 5, 1916; *Pedagogical Seminary*, Mar. and June, 1916.—EDITOR.

EDITORIAL

International Relations in Home Economics. At this time of interest in all world problems the teacher of Home Economics who realizes full professional responsibility will take an interest in the subject which extends outside the limitations of one's own country. It is appropriate, therefore, that our Association has an International Committee on the Teaching of Home Economics, the purpose of which is to advance the exchange of information regarding teaching conditions in various countries, and especially to give help in the introduction of Home Economics into newer countries or into those countries where it is just finding its way.

The committee results from a meeting of the alumni of a college in China held in New York a year ago, which presented a request to the American Home Economics Association that assistance be given in the organization of a department of Home Economics in this Oriental college. The International Committee of the Association has since made a plan, outlined elsewhere in this issue, for visits by an American teacher of Home Economics to Oriental and other higher institutions in the interest of the introduction of Home Economics, and also broaches a plan for the exchange of teaching positions between American and European teachers of Home Economics at the close of the war. That this plan is not a mere fancy was illustrated the other day when a representative of several of the church mission boards placed before this committee a request that its representative assist in the organization of a college for women in the capital city of one of the great countries of the Orient.

The JOURNAL, therefore, makes a plea with its readers that they do all in their power to advance the work undertaken by the International Committee. American teachers of Home Economics travelling abroad, whether in Central and South America, in Europe, or in the Orient, can render real service by making advanced plans for coöperation with the Committee. Our Association should be represented in every international gathering which treats topics related to our field. The interests of every teacher of Home Economics ought to broaden out from the local community or state, and take in a world view.

ANNOUNCEMENTS

THE CENTRAL ASSOCIATION OF SCIENCE AND MATHEMATICS TEACHERS

HOME ECONOMICS SECTION

Edna N. White, Chairman, Ohio State University, Columbus.

Carlotta C. Greer, Vice Chairman, East Technical High School,
Cleveland, Ohio;

Grace G. Hood, Secretary, Lewis Institute, Chicago.

The Home Economics Section of the Central Association of Science and Mathematics Teachers will hold its annual meeting at the University of Chicago on Friday and Saturday December 1-2, 1916.

The following program will be presented.

Friday, December 1, 1.30 p.m.

1. Teaching Practical Dietetics

Dr. C. F. Langworthy, Chief, U. S. Department of Agriculture, States Relations
Service, Washington, D. C.

Discussion

Amy Daniels, in charge of Dietetics at University of Wisconsin, Madison

2. Fitting Home Economics Work to Community Needs

Carrie A. Lyford, Specialist in Home Economics, Department of the Interior, Bureau
of Education, Washington, D. C.

Discussion

3. The Content of Domestic Art Courses

Anna McMillan, in charge of Domestic Art, Lewis Institute, Chicago

Discussion

Saturday, December 2, 9.00 a.m.

Business Meeting

Report of Committees

Consideration of New and of Unfinished Business

Election of Officers

10.00 a. m.

I. The Standardization of Textile and Clothing Teaching in Grades and High Schools

Round Table Discussion

Ethel Sapp Tudor, presiding. In charge of Home Economics Department at Baldwin-
Wallace College, Berea, Ohio. Formerly with Central High School, Akron, Ohio.

Discussion

Mrs. M. G. Adams, Supervisor of Practice Teaching, Ohio State University, Columbus

Anne Green, Township High School, De Kalb, Ill.

Anna McMillan, Lewis Institute, Chicago

Minnie Peterson, Supervisor of Sewing, Peoria, Ill.

Lora Lewis, Supervisor, Terre Haute, Ind.

Katharine Hardy, Supervisor of Domestic Science, Dayton, Ohio

Agnes Hanna, School of Education, University of Chicago

II. The Standardization of Food Teaching in Grades and High Schools

Round Table discussion (Talks limited to 5 minutes)

Emma Conley, presiding. Extension Department, University of Wisconsin, Madison. Formerly State Inspector of Domestic Science in High Schools in Wisconsin.

1. Home Economics in the Junior High School

Carrie E. King, Public Schools, Chicago, Ill.

Faith Lanman, Supervisor of Domestic Science, Columbus, Ohio

General Discussion

2. Science in Relation to Food Work

Jenny H. Snow, Chicago Normal School, Chicago

Helen Monsch, Iowa State College, Ames, Iowa

General Discussion

3. The Teaching of Standards

Florence Harrison, University of Illinois, Urbana

Carlotta Greer, East Technical High School, Cleveland, Ohio

General Discussion

4. The Relation of the High School Lunch Room to the Home Economics Teacher

Elizabeth Stone, Public Schools, Decatur, Ill.

Alice Treganza, Public Schools, Bloomington, Ill.

General Discussion

5. High School Home Economics and College Entrance Requirements

Gertrude Van Hoesen, University of Chicago

Mary Chapin, State Normal School, Bowling Green, Ohio

**THE MEETING OF THE HOME ECONOMICS ASSOCIATION IN
KANSAS CITY**

The next meeting of the Department of Superintendence of the National Education Association will be held in Kansas City, Mo., from February 26 to March 3, 1917.

As in former years the American Home Economics Association will hold special sessions with this convention. There is a strong contingent of Home Economics teachers in Kansas City who will give our Association a cordial welcome.

Miss Essie M. Heyle, supervisor of the work in the city schools, has offered any possible assistance.

The Kupper Hotel has been selected for headquarters of the Association. It is four short blocks from the Hotels Baltimore and Muehlbach, the Convention headquarters, and is to be used by the Deans of College Women and other associations.

Members who are planning to be present SHOULD MAKE THEIR RESERVATIONS IMMEDIATELY.

The best way to do this is to write directly to Mr. Otto F. Dubach, Chairman of Committee on hotels, Board of Education, Kansas City, telling the character of the reservation desired. The rates at the Kupper are as follows:

Single room, without bath.....	\$1.00-\$2.00
Single room, with bath.....	2.00- 3.00
Double room, without bath.....	2.00- 3.00
Double room, with bath.....	3.00- 6.00

PLEASE MAKE YOUR RESERVATIONS

THE QUESTION BOX

Conducted by a committee of the Science Section of the American Home Economics Association. Chairman, Prof. Amy Louise Daniels, University of Wisconsin, Madison, Wis. Questions may be sent directly to Miss Daniels.

Question: In the following recipe is there enough saccharine to make the pickles dangerous?

"Wash cucumbers, mix well $1\frac{1}{2}$ cups salt, $\frac{1}{2}$ cup ground mustard, and one level teaspoon of saccharine. Add one gallon of vinegar and mix thoroughly. Add spice and place all in granite vessel for four or five days and can without heating."

Answer: The amount of saccharine used in the above recipe may not be enough to produce untoward results. This, however, would depend upon the number of pickles consumed by an individual at any one time. Three tenths gram of saccharine is the maximal dose. In the recipe $0.015 +$ gram of saccharine is contained in every tablespoonful of the vinegar. Obviously, a good many pickles would have to be eaten in order to obtain the maximal dosage. But why use saccharine, a substance having no food value, when sugar may be used to give the sweet taste desired? Furthermore, the United States government prohibits the addition of saccharine to food substances offered for sale in the District of Columbia or the territories, or shipped in interstate or foreign commerce, or offered for importation into the United States. (Rules and Regulation for the Enforcement of the Food and Drug Act, June 30, 1908. Food Inspection Decision 138.)

COMMENT AND DISCUSSION

The Journal of Home Economics:

In response to the request for information regarding a successful course in home nursing, I am writing to tell of the work in our high school.

1. The course may be elected by students who have previously had three terms of work in the department.
2. Senior high school girls make the best students, though younger girls in the second and third years of the school do very good work.
3. A full term credit is given for the work. This means two double laboratory periods and one recitation period per week, with the same amount of time spent in preparation. This includes notebook, outside reading, and home practice.
4. There are 36 laboratory days and 18 recitations. Very often one half of the laboratory work is used for recitation. The course is divided into sections arbitrarily as follows:
 - a. Review of general physiology. The physiology of digestion. Hygiene. The hygiene of clothing.
 - b. The bed room, its location, furnishing and care. Care of an invalid. Bed making, with bedfast patient (a grade school girl.) Hygiene of baths. Giving bath in bed. Administration of simple medicines. Counting pulse, temperature, and respiration.
 - c. Emergencies, poultices, bandaging.
 - d. Invalid cookery (6 or 8 lessons).
 - e. Care of children. Proper clothing. Demonstration sponge bath of baby.
 - f. Infants and children's food. Care of bottles. Modified milk. Food through 5 years.

The work has been surprisingly well done and students have liked it very much. It has been a pleasure to find special aptitude developed which has been put into use at home, and in some cases girls who are finishing their high school work have signified their intention of entering a training school for nurses.

It is not easy to arrange for the practical work with babies. More of this would be advantageous.

ELIZABETH L. COWAN,
*Supervisor and Teacher of Household Arts,
Crawfordsville, Ind.*

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

Low Cost Cooking. By FLORENCE NESBIT. Chicago: American School of Home Economics, 1915, pp. 127. \$0.50. By mail of the Journal, \$0.56. Lots of 20 or more at \$0.25.

Miss Nesbit was one of the first of the visiting housekeepers in Chicago and was later given the supervision of the money issued by the Juvenile Court of Chicago under the Widows Pension Act. Her book, therefore, is written by one who has had first hand knowledge of the audience whom she is wishing to reach and the practical and usable material included bears evidence of her experience.

The first part of the book discusses foods in general, giving simple statements as to the uses of the various food principles with special emphasis on the value of proteins and mineral salts. There is some interesting material on the comparative cost of bulk and package foods, small quantity versus large quantity buying, and choice of fats and cuts of meats. Following this are instructions in regard to kitchen and pantry, which might perhaps have been amplified with more material on the sanitary care of food. The usual statements concerning level measurements are followed by directions for obtaining a level teaspoon, tablespoon or cup of material and the housekeeper is not only told to use a measuring cup but is advised where to obtain one for five cents. The same practical help is given later in the book when the recipes for the use of the fireless cooker are followed by directions for making one at home.

The main part of the book is given up to general recipes which include all types of dishes in forms which are well suited to the purposes of the book. Following this are menus for summer and winter. These are

given for one week in each season with specific directions for procedure in preparation, and additional menus for three weeks are put in tabulated form. It is hard to believe that such daily and weekly menus can be sufficiently elastic to be adapted to the needs of a particular family, so that their value lies chiefly in the recipes which might have been included in the preceding part of the book. However the type of housekeeper for whom this book is written is often at a loss for just such definite directions either through lack of training or because she needs help in adapting herself to conditions in a new country.

A problem which is found in many of the homes of the working people is that of the mother who must go out of the home to earn her living and yet must supply the food for her family. One chapter is devoted to suggestions as to dishes which the children may prepare in part, or entirely, in her absence. Two other difficulties often met by the visiting housekeeper are the lack of formality and sociability in the serving of meals and the tendency to give to children of all ages the same food which is served to adults. Miss Nesbit gives a page to the setting of a table and serving a meal, assuming that such practices will be observed; she also gives among her recipes a number of attractive beverages which might induce the children to forego tea and coffee, and puts much emphasis on the value of milk.

With all this valuable material ready for use the difficulty will be to get it to those who most need it. The more intelligent housekeepers will be able to use the book themselves but many more will have to depend on visiting housekeeper and settlement for interpretation. For these workers the book will prove a helpful guide.

FRANCES L. SWAIN.

Your Baby; a Guide for Mothers. By EDITH B. LOWRY. Chicago: Forbes and Company, 1915, pp. 254. \$1.00. By mail of the Journal, \$1.07.

Efficient motherhood is the keynote of this book. Recognizing the fact that the present generation cannot choose its ancestors, Dr. Lowry's plea is for better ancestors for the generations to come. In simple dignified language she tells briefly the fundamental truths concerning the genesis of life. Her brief discussion of the "Twilight Sleep" is the preface to some very pertinent and wholesome advice as to the care of the body which is to be the repository of the priceless treasure of a new life.

Her practical suggestions concerning the preparation, from a medical standpoint, for the birth of the baby; the list of articles needed for the baby's outfit; the discussion of the proper bathing and feeding of the baby; and the chapter on accidents and diseases make the book invaluable to the inexperienced young mother.

This book in the hands of every young woman, married or single, would be a factor of incalculable value in our national movement for the conservation of human life.

EMMA B. WAGNER.

Diet for Children. By LOUISE E. HOGAN. Indianapolis: The Bobbs-Merrill Company, 1916, pp. 160. \$0.75. By mail of the JOURNAL, \$0.80.

The recently awakened interest in the relation of food to nutrition and growth makes welcome contributions purporting to apply the results of recent investigations to the diet of children. Within the last few years much has been written concerning the feeding of infants, but for the child over one year the mother has been able to get but little definite information.

The title of the book "Diet for Children" suggests that the much sought information is at last available. The book, however, is a great disappointment, for it not only fails to take cognizance of recent investigations, but many of the statements are incorrect

and misleading. For example, fats are classified as hydrocarbons; milk is said to contain "casein or cheese, sugar, phosphates, and cream;" "eggs form a complete food, if the shell, which supplies the chick with salts, is taken into consideration; hence for children supplement eggs with salt-giving foods." Carrots and canned fruits are listed in the foods forbidden until after second dentition. Nursing mothers are urged to take frequent exercise, because "through lack of exercise the milk becomes too concentrated." "Too frequent nursing renders milk too solid, lessens the water, and gives the child colic. Too long intervals make the milk too watery and fail to give its necessary nutrition." The author appreciates that when milk is heated some chemical change takes place, but believes that the mother can correct this by consultation with a careful physician, or by studying for herself how to supply what is lost by heating and replacing it with other food. We wish Mrs. Hogan would tell us just what is lost by heating.

In the section dealing with the place of fruit in the nursery, the following statement is made:—"They (fruits) contain very large proportions of water, but their food value lies in the sugar, acid, and salts they contain, which cool the blood, aid digestion, tend to promote intestinal action, correct tendencies to constipation. They are especially adapted to the nourishment of the brain and nervous system."

Considerable space is devoted to suggestive menus for children over one year. These are taken from various more or less reputable authorities, for which credit is given. Many of these are helpful. However, few, if any, pediatricists now believe that eggs should be eliminated from the diet until the child is nineteen months old, although there are still some who would withhold meat until after five.

Approximately one-third of the book is devoted to recipes for making the various dishes which the author believes are suitable for children. In most cases the amount of material used indicates that family portions are to be prepared. AMY L. DANIELS.

Mothercraft. By SARAH COMSTOCK. New York: Hearst's International Library Company, 1915, pp. 215. \$1.00. By mail of the JOURNAL, \$1.08.

This delightfully readable and timely book puts into the hands of young mothers and mothers-to-be the best modern teaching in this country regarding the hygienic care and the educational occupation of children of nursery age.

The name *Mothercraft* is a newly-coined word which at once provokes discussion, principally for the reason that *craft* seems a misfit in this connection. To the coiners of the word it is synonymous with mother-skill, and includes all that pertains to the home care and education of children from infancy to maturity.

With this conception of the word in mind, Miss Comstock's book is extremely limited in scope, as it devotes most of its pages to the care of the infant. In this it reflects the authoritative teaching of the day which stresses the first period of child life. The fact that she gives only one chapter out of eight to the educational occupation of children in the home is indicative of the newness of the ground she is on.

The motive for the book is found on page 4 where she makes a free translation of Saleeby when he says in his discussion of motherhood, "At present the most important profession in the world is carried on by unskilled labor." (Saleeby, *Parenthood and Race Culture*, p. 173.)

Miss Comstock makes no claim to originality in the content of her book, but does claim that "every statement is based on unimpeachable authority." A list of her authorities includes the names of specialists known the country over. One misses the name of Marianna Wheeler, so long associated with Dr. L. E. Holt at the Babies' Hospital, New York, and herself a pioneer worker in this field. Chicago is listed as having a "School of Mothercraft," whereas the Child Welfare Committee, standing sponsor for the work among the mothers of

the poor, does not so designate it. Aside from the authorities cited, the book carries conviction because of its very saneness. It keeps to the safe middle-ground always.

The strength of the book lies mainly in the presentation of the matter in hand. No facts are dodged, but salient ones are driven home by an apt illustration, a witty turn of expression. Advice is given pleasantly, acceptably a rare gift. The introductory page of "Don'ts, by the Baby" beginning "Don't ruff me, and fluff me, shirr, rosette, and puff me," has been known to sell the book. Miss Comstock neither spares nor offends the supposedly intelligent mother who is in reality woefully ignorant regarding her child's care and education, although she may be able to "raise Pomeranians without an error!"

In a word, the book popularizes much of the present-day teaching which is bringing to public consciousness the value and dignity of the mother's work, and of her need of preparation for it.

ELIZABETH JENKINS.

The Baby. N. Dak. Agr. Exp. Sta. Spec. Bul. June, 1916, Vol. 4, no. 5, pp. 97-132.

This Special Bulletin of the Food Department of the North Dakota Agricultural Experiment Station is devoted to the "Care of the Baby," stating in its introduction that the "most important product of the state is the baby. It is the greatest asset of every home." The bulletin includes two articles, *The Summer Care of Infants*, from the United States Public Health Service, and *Feeding and Care of the Baby*, from the bulletin of the Maine State Board of Health. The North Dakota Station is to be commended for circulating in its own bulletin authoritative material which has been compiled elsewhere, rather than necessarily attempting to write something new. The suggestion is worthy of adoption generally in our state bulletin series.

BOOKS RECEIVED

- Clothing For Women, Selection, Design, Construction.* By Laura I. Baldt. Philadelphia: J. B. Lippincott Company, c1916, pp. 454. \$2.00.
- A Course in Household Arts.* Pt. 1. By Sister Loretto Basil Duff. Boston: Whitcomb & Barrows, 1916, pp. 301. \$1.00.
- The Expectant Mother.* By Samuel Wyllis Bandler. Philadelphia: W. B. Saunders Company, 1916, pp. 213. \$1.25.
- Fight for Food.* By Leon A. Congdon. Philadelphia: J. B. Lippincott Company, 1916, pp. 207. \$1.25.
- Practical Biology.* By W. M. Smallwood, Ida L. Reveley, and Guy A. Bailey. Boston: Allyn & Bacon, c1916, pp. 421. \$1.25.
- The Rural School Lunch.* By Nellie Wing Farnsworth. St. Paul, Minn.: Webb Publishing Company, 1916, pp. 42. \$0.25, paper.

PAMPHLETS

- U. S. Pub. Health Service Health Reports. Gov. Printing Office: Supt. of Documents.
- Cyanide Gas for the Destruction of Insects with special reference to mosquitoes, fleas, body lice and bedbugs.* By R. H. Creel and F. M. Faget. Reprint No. 343, 1916, pp. 15. \$0.05.
- Health Insurance.* By William C. Woodward and B. S. Warren. Reprint No. 352, 1916, pp. 8. \$0.05.
- Health of Garment Workers.* By B. S. Warren and Edgar Sydenstricker. Reprint No. 341, 1916, pp. 10. \$0.05.
- U. S. Dept. Agr. Bulletins. Gov. Printing Office: Supt. of Documents.
- Bacteria in Commercial Bottled Waters.* By Maud Mason Obst. Bulletin No. 369, May 26, 1916, pp. 14. \$0.05.
- Lessons on Tomatoes for Rural Schools.* By E. A. Miller. Bulletin 392, Aug. 23, 1916, pp. 18. \$0.05.
- Extension Dept. of Iowa State College Bulletins. Iowa State College, Ames, Ia.
- The Child and Its Care.* By Neale S. Knowles, Louise H. Campbell, and Mabel C. Bentley. Home Economics Bulletin No. 2, 1916, pp. 32.
- Home Furnishing.* By Winifred S. Gettemy. Home Economics Bulletin No. 7, 1916, pp. 36.
- Home Management.* By Neale S. Knowles, Louise H. Campbell, and Mabel C. Bentley. Home Economics Bulletin No. 6, 1916, pp. 19.
- Personal Hygiene.* By Neale S. Knowles, Louise H. Campbell, and Mabel C. Bentley. Home Economics Bulletin No. 3, 1916, pp. 24.
- Planning and Equipping the Kitchen.* Home Economics Bulletin No. 8, 1916, pp. 24.
- Planning and Serving Meals.* By Neale S. Knowles, Louise H. Campbell, and Mabel C. Bentley. Home Economics Bulletin No. 1, 1916, pp. 32.
- Planning Costume.* Home Economics Bulletin No. 9, 1916, pp. 20.
- Public and Home Sanitation.* Home Economics Bulletin No. 5, 1916, pp. 24.
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NEWS FROM THE FIELD

News Items from the Northwest. Miss Katherine Martindale has been appointed instructor at the University of Washington to succeed Miss Elizabeth Rothermel, who has resigned. Miss Martindale is a graduate of Smith College and received her professional training at the University of Wisconsin.

Miss Lucy Dice, 1915, is to be cafeteria manager at the Young Women's Christian Association in Bellingham, Washington.

Miss Lulu Condron, University of Washington 1916, has been appointed instructor in Domestic Art subjects at the University of Wyoming.

The following new teachers have received appointments in the Seattle Schools: Achsah Matthews, Columbia University; Georgia Meeks and Esther Nelson, University of Minnesota; Marguerite De Shon, Bradley Polytechnic; Florence Thorne, Stout Institute; Charlotte Davis, Anna Warren, Eileen Houlahan and Stella Pierce, University of Washington.

The Home Economics Section of the Inland Empire Teachers' Association met in Spokane, Washington, April 18, 19, and 20, Miss Dorothy Shank presiding. This organization brings together the teachers from the four northwest states, Montana, Idaho, Washington, and Oregon.

The following subjects were presented. Review of recent Home Economics textbooks, Anna L. Post; How to avoid repetition in elementary, high school, and college courses, Agnes H. Craig; Discussion, Grace G. Denny and Chloe Clark.

The officers for next year are: Chairman, Grace G. Denny; Secretary and Treasurer, Miss Ford.

A conference of the Washington State Association was held in connection with this meeting. The program was as follows: The social life of the girl as influenced by Home Economics training, Mary F. Rausch; The hot lunch as conducted by Cheney Normal, Mrs. Anderson; Extension work in Home Economics, Elizabeth Jones.

The teachers of the west side of the state held a conference in Everett a week later. Miss Raitt, the president, conducted an informal discussion on the use of the practice cottage, the school apartment and the girl's own home in Home Economics teaching, and on the contribution of Home Economics teaching to the home.

The Washington Home Economics Association met with the Washington Educational Association in Spokane in October, with the following program:

Morning Session. Home Economics in the high schools, from the superintendent's point of view, Supt. I. C. Pratt, Spokane; Discussion; The Home Economics teacher's contribution to extension work, W. S. Thormber, Director of Extension Division, Washington State College; Discussion.

Afternoon Session. Report of Committee on Length of Period for Home Economics Work, Agnes H. Craig, Head of Home Economics Department, Washington State College; Report of Committee on School Lunches, Mrs. Anderson, State Normal School, Cheney.

The University of Kentucky. Not only Kentucky, but all who are interested in Home Economics anywhere, will rejoice in this letter from Miss Mary E. Sweeney, Dean of the College.

"May I tell you of something that is making very happy everybody connected

with Home Economics in Kentucky? The University of Kentucky has made of Home Economics, formerly a department of the College of Agriculture, a coördinating college of the University of equal rank with law, engineering, and arts, and science. To us down here this is a great step forward and we think it presages a great awakening in the secondary schools of the state and a realization upon the part of all women of the high character of their profession of homemaker and mother.

"The Federation of Women's Clubs took an active part in bringing about the change and have in every possible way lent their influence and support to the movement. Their influence and interest in the future will prove a great factor in the future development of the college."

The State Normal School of Harrisonburg, Va., reports that the interest in domestic science work has grown to such an extent as to require additional instructors, courses, and equipment. This year nine new courses have been added, such as House Planning, House Furnishing and Decoration, Institutional Cookery and Catering, Institutional Management, Household Bacteriology, and others. The new instructors are Miss Hannah Corbett, B.S., Teachers College, Columbia University; Mrs. Pearl Moody, B.S., George Peabody College for Teachers; Miss Gertrude Button, B.S., Cornell University. The head of the department is Miss Frances Sale, B.S., Teachers College, Columbia University, who has been with the school since its beginning seven years ago.

The Agricultural High School in connection with the University of Nebraska has suffered from a condition existing in similar high schools, that is, requiring that the student carry six, seven, or more studies at the same time. A revision of the course has been made, grouping the work in such a way that the number of subjects has been reduced to five. Correspondence with other technical and agricultural high schools reveals the fact that the sequence of the sci-

ences and the applied subjects is a much mooted question. The teachers of sciences wish to teach them to juniors and seniors and the teachers of the applied sciences wish to have science taught early enough to be of value in their work. The sequence of science and food study which has been fairly satisfactory in the Nebraska Agricultural High School will be continued. It is: Freshmen year, physiology and hygiene; sophomore year, chemistry, food study, and physical geography one-half year; junior year, advanced food study, botany, and physics.

Canadian Short Courses in Home Economics. The Ontario Agricultural College can not accommodate all who wish to come to Macdonald Institute for Home Economics training; and many desire Home Economics training who can not be spared from home. The college, therefore, is extending the usefulness of Macdonald Institute by opening branches here and there in such communities as are willing and able to coöperate.

The Ontario Agricultural College is prepared:

To open a Macdonald Institute Branch provided at least 20 students agree to take the course.

To provide the necessary class rooms and equip them with stoves, tables, sewing machines, etc.

To provide and pay a satisfactory teacher, who will be a member of the regular Macdonald Institute staff.

To maintain the work of the school.

To give 24 students a short course in domestic science with a choice of two elective subjects—the same as the short course given in Guelph.

To give either a 12 weeks' course five days a week, or a 20 weeks' course 3 days a week.

To hold an examination at the end of the course for any who wish to try it. Those passing would be eligible to enter the second term of The Homemakers Course in Guelph.

The subjects prescribed with the number of periods per week, are as follows: Plain

cooking, 10; plain sewing, 4; laundry, 3; foods, 1; sanitation, 1; home nursing, 1; care of the house, 3; English, 2; elective, 4.

Alpha Chapter of Omicron Nu. During the past year, the Chapter has made an attempt at the standardization of Home Economics in the high schools throughout Michigan. This problem seemed to us an especially interesting and important one, for, if a standard course of study could be worked out and introduced into high schools of the state, students would enter college on a uniform basis, with their abilities neither over nor under-estimated.

With this in mind, a comparison was made of the high school courses offered in cities and towns of various sizes, thereby laying a foundation upon which we have planned to carry out our work for the coming year.

The following is a list of our national officers for the coming year.

President, Miss Georgia L. White, Dean of Home Economics, Michigan Agricultural College.

Vice-President, Gladys Robinson, Purdue University, Lafayette, Indiana.

Secretary, Emily Castle, Michigan Agricultural College.

Treasurer, Mabel Moore, University of Illinois, Urbana, Illinois.

The work of Beta Chapter of Omicron Nu during the past year was of necessity along financial lines. We began the year with a debt that seemed quite an incumbency to the five active members. After an appeal to the Alumnae, who responded very generously, we had a side show at the annual House Economics party, which this year took the form of a circus. The net proceeds did much to swell our bank account. Still more was needed and so we made and sold doughnuts—forty-five dozen. By these means we were able to raise our debt, and to send a delegate to the National Conclave held at Ames, Iowa.

Desiring a clean slate for next year's work, we sought to put ourselves on a

firm financial basis. This we did by introducing State College Seals. Of the order of 25,000 we have sold enough to cover the initial cost, and to start next year's bank account. This was accomplished during the last week of college. It is the plan to make the seals a steady source of income to the chapter.

With our Senior and Junior accessions we had a total membership of fifteen at the close of the college year.

We aim to come in close contact with the Freshmen of our department by giving them a tea early every fall. We keep in touch with our Alumnae by issuing yearly bulletins of our work. We ask them to give us from their experience what they consider we can do to prepare ourselves better for the problems we are sure to meet after leaving college, and how to prepare ourselves better in college for leadership afterwards. From their letters we plan to make a series of programs for our year's work.

The Ely Club for Students. The Ely Club for students, established in New York City and conducted by the Alumnae of the Misses Ely School of Greenwich, Conn., though independent in its organization and management, provides a home for young women, who are either studying with a view to self-support or who are in their first year of professional work.

The object of the Club is to give to young students of limited means, from out of town, the protection and the privileges of a clean and comfortable home such as can not be had at the usual commercial boarding houses within their means. It is also intended to provide an opportunity for the stimulation of earnest endeavor, enhanced by community interest, and an appreciation of the dignity of labor.

The Club House accommodates twenty-two resident members. The dining room is open to non-resident members.

The University of Wisconsin has, for 1916-17, offered its first fellowship in Home Economics. The fellow this year is Miss

Brenda Sutherland of Melbourne, Australia, who did her undergraduate work and received her Master of Science degree at the University of Melbourne. Since then she has done teaching and recently has taken her Bachelor of Arts degree at the University of Toronto, majoring in Home Economics. This fellowship is open to graduate students who have majored in Home Economics, and the applications should be in the hands of the Registrar of the University of Wisconsin by March 1 each year, since the appointment is made in March or April.

Peace Prize Contest. The American School Peace League offers two sets of prizes, to be known as the Seabury Prizes for the best essays on one of the following subjects:

1. What Education Can Do Toward the Maintenance of Permanent Peace. Open to seniors in normal schools.

2. The Influence of the United States in the Adoption of a Plan for Permanent Peace. Open to seniors in secondary schools.

Three prizes of seventy-five, fifty and twenty-five dollars will be given for the best essays in both sets.

Information concerning literature on the subject, and details in regard to the conditions of the contest may be obtained from the Secretary of the League, Mrs. Fannie Fern Andrews, 405 Marlborough Street, Boston, Mass.

Brief Notes. Miss Grace Schermerhorn, for three years associate professor of education and in charge of the practice teaching in Home Economics at Iowa State College, has resigned to accept the position of supervisor in the schools of Long Beach, California.

Miss Cora B. Miller who has been in charge of the public school work in Home Economics in Fort Dodge, Iowa, has resigned to accept a position as instructor in critic teaching, Iowa State College, Ames, Iowa.

Miss Mary Louise Tuttle, during the past year Director of the Social Work Department of the Women's Educational and Industrial Union, Boston, Mass., is now Director of the School of Home Economics in the Russell Sage College of Practical Arts, Troy, N. Y.

Two college instructors who have lately resigned from their positions are Miss Jessie P. Rich, in charge of extension work at the University of Texas, now Mrs. B. L. Ames, Montgomery, Ala., and Miss Luella Scovill of the University of Wisconsin, now Mrs. E. L. Harrison, Lexington, Ky. Both of these women have agreed to help this year in the work of the Association and the JOURNAL.

THE Journal of Home Economics

For those interested in Homemaking, Institution Management,
and Educational Work in Home Economics

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FREDRICK ACCUM (See page 653)

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RECENT WORK ON NORMAL ADULT NUTRITION

KATHARINE BLUNT

University of Chicago

This paper is a review of some of the recent work on normal adult nutrition. It follows Dr. Wheeler's¹ excellent survey in last November's JOURNAL, and includes roughly papers published between August, 1915, and August, 1916, inclusive, with occasional mention of earlier work. The effort has been made to cling closely to the subject, so that questions of growth, including all work on vitamins, and nutrition in disease have been omitted. The author has tried to choose from the mass of material what is most interesting and important to students of nutrition, but more or less arbitrary selections have sometimes of necessity been made.

FATS

On the digestibility of fat two papers have appeared. Langworthy and Holmes² of the office of Home Economics, States Relations Service, incorporated four animal fats, butter fat, lard, beef and mutton fat, in a blanc mange made of skimmed milk, corn starch, and sugar flavored with caramel, thus disguising the fatty taste, and distributing the fat evenly through the food, and fed this in a simple diet. The coefficients of digestibility found varied from 97 per cent for the butter fat and lard, 93 per cent for the beef, to 88 per cent for the mutton fat, thus ranging the fats in the order of their melting points (32, 35, 45 and 50°)

¹ Wheeler, Ruth, Recent contributions to the foundations of dietetics. *Jour. Home Econ.*, 7, (1915), pp. 469-479.

² Langworthy, C. F., Holmes, A. D., Digestibility of some animal fats. *U. S. Dept. Agr. Bul.* 310, (1915).

and also controverting the popular notion as to the indigestibility of lard. The increasing use of hydrogenated oils like crisco gives value to experiments³ on the comparative digestibility of lard and a vegetable oil hydrogenated in the laboratory, both giving coefficients of about 96 per cent. The fats in these experiments were fed in potato chips.

Especially interesting on the subject of fat metabolism, are Bloor's papers. He is now working especially with the fat, "lipoids," of the blood.⁴ His methods distinguish between true fats, phosphatides (lecithin, cephalin, etc.) and the higher alcohol cholesterol with its fatty acid esters. These are logically grouped together not only because of their solubility in the ordinary fat solvents, but because they are all probably concerned in fat metabolism. In Bloor's experiments the lecithin of the blood was increased 20 per cent after feeding fat to fasting animals, and from this and other evidence he concludes that probably all absorbed fat passes through a lecithin stage, that fat is probably the inactive form, the form in which the lipoids are stored, and lecithin is the first step in their utilization.

With this increased understanding of the importance of one class of phosphorus compounds in the body, the phosphorized fats, should be mentioned the report of some work done at the request of the Council on Pharmacy and Chemistry of the American Medical Association on two phosphorus compounds popularly used as tonics. The first, Marshall's⁵ on glycerophosphates, emphasizes the fact that the organism can assimilate phosphorus as readily from inorganic as organic forms, that the glycerophosphates are split up in the intestine into inorganic phosphates and that glycerophosphates are in no way superior to phosphates. "Glycerophosphates will continue to be manufactured until physicians refuse to prescribe them." The second is Marriott's⁶ experiments and report on hypophosphites: "There is no reliable evidence that they exert a physiological effect; it has not been demonstrated that they influence any pathologic process; they are not 'foods.'

³ Smith, C. A., Miller, R. J., and Hawk, P. B., Studies on the relative digestibility and utilization by the human body of lard and hydrogenated vegetable oil. *Jour. Biol. Chem.*, 23, (1915), pp. 505-511.

⁴ Bloor, W. R., Fat absorption and the blood lipoids. *Jour. Biol. Chem.*, 23, (1915), pp. 317-326. Fat assimilation. *Ibid.*, 24, (1916), pp. 447-460. The distribution of the lipoids ("fat") in human blood. *Ibid.*, 25, (1916), pp. 577-599.

⁵ Marshall, E. K., The therapeutic value of organic phosphorus compounds. *Jour. Amer. Med. Assn.*, 64, (1915), p. 573, and Editorial, *ibid.*, 66, (1916), p. 1205.

⁶ Marriott, W. McKim, The therapeutic value of the hypophosphites. *Jour. Amer. Med. Assn.* 66, (1916), pp. 486-488.

If they are of any use, that use has never been discovered." In this and other connections Forbes' summary of mineral nutrients in human dietetics is of much interest.

SUGARS

The subject of the assimilation limit of sugars has been reopened with the result that the figures which have persisted for years in some of the text books will have to be abandoned. Taylor and Hulton⁸ of the University of Pennsylvania make the statement that apparently in the majority of healthy male adults there is no limit of assimilation of glucose. A group of medical students ingested the purest glucose in the form of a syrup in quantities ranging from 200 to 500 grams glucose, the latter amount being difficult to take and retain even by their most practiced young men. Of nine subjects taking 300 grams only three showed glycosuria, of six taking 400 grams only two, and of the five taking 500 grams only one. Thus the experimenters reached a "limit of ingestion" of the glucose but no general limit of assimilation. These larger quantities of glucose showed no marked influence on the sugar of the blood and no intestinal disturbances. Levulose, on the other hand, did cause intestinal disturbance when 300 grams were taken, whether because of inherent difference or some associated impurity was not known.

A quite different method for studying the tolerance of the system to sugars is to inject the sugar solution intravenously at a constant speed. The uncertain factors of digestion and absorption are thus eliminated. Woodyatt and his associates⁹ at Rush Medical School report experiments with his improved machine showing extraordinarily high quantities of glucose injected without glycosuria. A normal man of 70 kg., resting quietly in bed may actually receive and assimilate 63 grams glucose per hour. This is equivalent to 252 calories per hour or at the rate of 6048 calories per day. The injections have been continued for two and a half hours on men and as long as twelve hours on animals. The normal tolerance limit for glucose is established at about 0.85 grams glucose per kilogram per hour for an indefinite time. For levulose the

⁷ Forbes, E. B., The mineral nutrients in practical human dietetics. *Jour. Home Econ.*, 8, (1916), pp. 122-130.

⁸ Taylor, A. E., and Hulton, Florence, The limit of assimilation of glucose. *Jour. Biol. Chem.*, 25, (1916), pp. 173-175.

⁹ Woodyatt, R. T., Sansum, W. D., and Wilder, R. M. *Jour. Amer. Med. Assn.*, 65, (1915), pp. 2067-2070.

value is only one-sixth that for glucose—0.15 gram; for galactose 0.1 gram; and for lactose near zero as known before. The authors say that the method employed might be “of general interest as a means of studying problems of absorption, metabolism, and elimination, and have therapeutic application.”

Sansum and Woodyatt¹⁰ have also determined the food value of commercial glucose or corn syrup in a novel way. They fed it to phlorizinized and glycogen-free dogs, and for controls fed chemically pure glucose. The sugar from the various carbohydrates should not be burned but eliminated in the urine. The commercial glucose yielded 95.48 per cent as much extra sugar as the pure substance and so was “capable of passing through whatsoever physiological processes of digestion, absorption, and assimilation are necessary for its ultimate existence in the body as *d*-glucose. Commercial glucose has also been fed¹¹ to rats as an important part of their diet, with entirely satisfactory results as to growth and reproduction, the experiment proving, therefore, the probably complete availability of the different carbohydrates present and the entire absence of any deleterious by-products. These various experiments should lay to rest the prejudice still remaining in some minds against this valuable food material.

The quickness with which the energy of the sugars is available to the body is quite notable. It may be shown by short time determinations of the respiratory quotient. Sucrose, lactose, levulose, and also alcohol, begin to be burned in appreciable quantity in five to eleven minutes; glucose and maltose require a longer time, from twenty to thirty minutes.¹²

Of significance in connection with metabolism of fats and carbohydrates is the great amount of recent work on acidosis. Most of it is on pathological subjects and is therefore not discussed here, but a paper¹³ from the Nutrition Laboratory and the Peter Bent Brigham Hospital,

¹⁰ Sansum, W. D., and Woodyatt, R. T., The use of phlorizinized dogs to determine the utilizable carbohydrates in foods. The food value of commercial glucose. *Jour. Biol. Chem.*, 24, (1916), pp. 23-29.

¹¹ Carlson, A. J., Hektoen, L., and LeCount, E. R., Effects of commercial glucose when fed to white rats. *Jour. Amer. Chem. Soc.*, 38, (1916), pp. 930-936.

¹² Higgins, H. L., Rapidity with which alcohol and some sugars may serve as nutriment. *Amer. Jour. Physiol.*, 41, (1916), p. 258.

¹³ Higgins, H. L., Peabody, F. W., and Fitz, R., A study of acidosis in three normal subjects with incidental observations on the action of alcohol as an antiketogenic agent. *Jour. Med. Research*, 34, (1916), pp. 263-272.

Boston, deals with its production in three normal subjects by several days use of a carbohydrate-free diet—eggs, meat, fish, butter, and sugar-free cream. The resulting acidosis was measured by most of the methods now used for the purpose the—diminution of the alveolar carbon dioxide resulting from the presence in the blood of abnormal acids which unite with the available alkali and so diminish the carbon dioxide binding power, the increase of urinary ammonia, titratable acidity, and acetone bodies. Alcohol failed to check the acidosis. The most prominent subjective effects were “loss of appetite, lack of energy, heaviness of the head, and a peculiar feeling of malaise.” The first carbohydrate meal brought about immediate improvement.

NITROGEN COMPOUNDS

Surprising to many students of diet are Bateman's¹⁴ results (Yale, on the digestibility of raw egg-white. He worked with dogs, rats) rabbits, and men. This article deals chiefly with the results from the first three. The experiments on men are to be reported in detail later, but Bateman says that the results are closely similar to those with the other animals. The uncooked egg-white fed in fairly large quantity produced diarrhea, 4 to 5 eggs to dogs weighing 5.5 to 7 kg. and 5 to 7 eggs to 10 to 12 kg. dogs. A water extract of the feces showed considerable coagulable protein, the unchanged egg-white; from 30 to 50 per cent of the ingested white could be recovered as coagulum. The diarrhea followed the ingestion of the egg-white whether taken alone, beaten with milk, mixed with cracker-meal and lard, or mixed with cracker-meal and lard and flavored with extract of beef. On a meat diet with the experimental animals the per cent of utilization of the nitrogen ranged from 94.7 to 95.2, but on the raw egg-white from 49.8 to 69.0. The utilization improved when the diet was continued, being 86.7 per cent on the tenth day. If the egg-white was cooked the diarrhea stopped and the utilization rose to 90 per cent. Heating to 55° C. before feeding did not prevent the diarrhea, 55° to 60° considerably decreased it, and 70° or above prevented it entirely. The raw egg-white is attacked with much difficulty by the digestive enzymes, possibly because of their adsorption by it. Egg-yolk behaved quite differently, being well utilized either raw or cooked unless fed with too much other fat.

¹⁴ Bateman, W. G., The digestibility and utilization of egg proteins. *Jour. Biol. Chem.*, 26, (1916), pp. 263-291.

Bateman concludes with the statement: "In current dieto-therapy raw whole eggs, raw egg-white, and albumin-water are extensively prescribed. There appears to be little in their conduct as foodstuffs, however, to warrant such faith in their nutritive value or ease of assimilation."

Another false dietetic idea which has long persisted in this country is the harmfulness of very young or "bob" veal. The European custom has not made the discrimination but our federal and state laws prohibit the sale of calves less than three to six weeks old. Berg¹⁵ of the Bureau of Animal Industry reports that chemical analysis of mature beef and immature veal brings out no differences that are dietetically significant, that the two digest in vitro at the same speed, and that young animals (cats) obtaining their only nitrogen from immature veal grow normally, and a pair after living on it for two-thirds of a year produced normal young. Later the Office of Home Economics¹⁶ undertook experiments on man to continue the work. First a number of individuals and families were given the very young veal cooked in different ways and found it entirely satisfactory and not conducive to any illness or distress. It was thought by some to be rather tasteless, and if roasted it presented a less appetizing appearance than the mature meats because of the greater shrinkage in cooking due to the loss of water from the larger quantity. The veal not more than five days old averaged 76 per cent water, and market veal 72 per cent. The coefficients of digestibility determined on a group of young men were practically the same for the protein of the two veals—93 per cent. An editorial¹⁷ in the *Journal of the American Medical Association* in commenting on the first of these papers on veal says that "it relieves food chemists and physicians from the embarrassment of having to confess, in the practical world, that they do not know why veal is not so good a food as beef or mutton."

The Office of Home Economics¹⁸ has also experimented on the digestibility of hard palates of cattle. The protein is about 86 per cent assimilated, somewhat less thoroughly than that of the common cuts of meat.

¹⁵ Berg, W. N., Biochemical comparison between mature beef and immature veal. *Jour. Agr. Research*, 5, (1916), pp. 667-711.

¹⁶ Langworthy, C. F., and Holmes, A. D., Digestibility of very young veal. *Jour. Agr. Research*, 6, (1916), pp. 577-588.

¹⁷ Editorial, Immature veal as food. *Jour. Amer. Med. Assn.*, 66, (1916), pp. 820, 821.

¹⁸ Langworthy, C. F., and Holmes, A. D., Digestibility of hard palates of cattle. *Jour. Agr. Research*, 6, (1916), pp. 641-648.

A third point on which we may have to revise our ideas, more general than the young veal question, is the protein content of meat. Janney,¹⁹ using his improved methods for separating protein and non-protein, finds that the amount of protein as usually determined exceeds that actually present by 15 to 20 per cent. Chicken and ox muscle, for instance, both contain only 16.6 per cent protein, while the determination made in the usual way on these materials gave 19.3 and 21.6 per cent. The errors in the usual figures are due to including non-protein nitrogenous compounds which contain about 13 per cent of the total nitrogen of muscle, and to using the inexact factor 6.25.

Considerable further work has been brought out on the relation between diet and uric acid. Among other papers may be mentioned Denis's²⁰ giving figures which show that with individuals with normal kidneys the blood shows no increase of uric acid even after feeding large quantities of purines in the diet. The normal kidneys are very efficient in removing uric acid from the body. A German investigator²¹ reports on the increasing uric acid of the urine after ingestion of the yeast food recently put on the market in Germany. Ten grams of the yeast increased the output as much as 100 grams of meat. The author therefore warns persons inclined to gout or to urate concretions against yeast, even, he goes so far as to say, in ordinary bread.

Further effort has been made to measure and explain the occasional increases of urinary uric acid on diets free from purines. Taylor's short paper²² of two years ago showed a uric acid excretion nearly three times as large on a purine-free high protein diet (egg-white) as on a practically nitrogen-free diet of purified starch and cane sugar. In some much more elaborate experiments Mendel and Stehle²³ found that the hourly excretion of uric acid in man increased over the fasting output very slightly when sucrose was fed, not at all with fat, and markedly with protein (gluten). Various laxatives had no effect,

¹⁹ Janney, N. W., The protein content of muscle. *Jour. Biol. Chem.*, 25, (1916), pp. 185-188.

²⁰ Denis, W., The effect of ingested purines on the uric acid content of the blood. *Jour. Biol. Chem.*, 23, (1915), pp. 147-155.

²¹ Salomon, H., *Münch. Med. Woch.*, 63, (1916), No. 13. Through *Jour. Amer. Med. Assn.*, 66, (1916), p. 1589.

²² Taylor, A. E., and Rose, W. C., The influence of protein intake upon the formation of uric acid. *Jour. Biol. Chem.*, 18, (1914), pp. 519-520.

²³ Mendel, L. B., and Stehle, R. L., The rôle of the digestive glands in the excretion of endogenous uric acid. *Jour. Biol. Chem.*, 22, (1915), pp. 215-231.

but pilocarpine, a drug which stimulates the secretory apparatus of the alimentary tract, increased the uric acid. They conclude that "the uric acid output, aside from the portion arising from precursors in the food, depends, to some extent at least, upon the degree to which the digestive glands are called into activity."

Another open question in purine metabolism, the failure of the body to excrete uric acid corresponding to the full amount of purine in the food, has been approached²⁴ by feeding sodium nucleate. The purines of the urine (uric acid and bases) accounted for from only 14 per cent to 30 per cent of the purine of the nucleate. The irregular loss is probably explained by bacteriological destruction of varying intensity. A very interesting summary²⁵ of his own and other work on purine metabolism has been brought out by Professor Wells of the University of Chicago.

Denis's work on uric acid of normal blood mentioned above and Bloor's on the lipoids of blood is illustrative of the fact that "the center of analytical interest in both normal and pathological metabolism is shifting from the urine to the blood."²⁶ There are further determinations of the non-protein nitrogen of the blood (urea, amino acids, etc.), some²⁷ slightly higher than the earlier ones of Folin and Denis and some²⁸ approximately the same. Studies like these blood analyses on normal subjects are constantly increasing in number and in accuracy. Their value is plain both for an understanding of normal processes of metabolism and as a firm basis for pathology and therapy.

GASTRIC DIGESTION

Investigations^{29, 30} of gastric digestion continue from this same point of view—the normal as the basis. As some of the papers consist largely

²⁴ Givens, M. H., and Hunter, A., Experiments upon the fate of ingested sodium nucleate in the human subject. *Jour. Biol. Chem.*, 23, (1915), pp. 299–309.

²⁵ Wells, H. G., Some features of purine metabolism. *Jour. Lab. Clin. Med.*, 1, (1915), pp. 164–171.

²⁶ Editorial. *Jour. Amer. Med. Assn.*, 67, (1916), p. 956.

²⁷ Gettler, A. O., and Baker, W., Chemical and physical examination of the blood in thirty normal cases. *Jour. Biol. Chem.*, 25, (1916), pp. 211–222.

²⁸ Bang, I., Investigation of the residual nitrogen of the blood. *Biochem. Z.*, 72, (1915). Five papers. Discussed in Editorial. *Jour. Amer. Med. Assn.*, 66, (1916), p. 1781.

²⁹ Talbot, E. S., The examination of normal gastric secretion by the fractional method. *Jour. Amer. Med. Assn.*, 66, (1916), p. 1849.

³⁰ Fowler, C. C., Rehfuess, M. E., and Hawk, P. B., Investigation of the gastric residuum in over one hundred normal cases. *Jour. Amer. Med. Assn.*, 65, (1915), pp. 1021–1025.

of figures and curves they can not well be abstracted. Carlson,³¹ working on his man with a gastric fistula, reports high acidity (0.5 per cent) of the normal appetite secretion, only very slight secretion on seeing food, and much secretion, averaging 70 cc. in twenty minutes, on chewing palatable food, and in general the more palatable the food the greater the volume of the juice. One interesting point (Kast's paper)³² is that with healthy individuals fatigue, either physical or mental, has very little effect upon gastro-intestinal motility. In patients with pathological digestive conditions fatigue does lessen motility, mental having more effect than physical. The time necessary for peptic digestion³³ may be much increased by the presence of cooked starch—the pure starch in colloidal solution, or cooked rice, potatoes, bread, etc. Dextrin does not hinder the digestion at all. That is, if cooked farinaceous food is not partially digested by the saliva the pepsin is adsorbed by the starch and hence much diminished in activity. This, of course, gives a very important function to the salivary amylase.

NEW FOODS

Several new foods are being urged. Soy beans as a constituent of canned baked beans are already widely advertised. Cottonseed meal as a human food is the subject of a vigorous propaganda. The seed contains a substance, gossypol,³⁴ toxic to many animals, especially pigs, if taken in more than moderate amounts; the oxidation products of this substance are not harmful. The nutritive value of cotton seed meal for rats has been investigated by Richardson and Green³⁵ of the Department of Domestic Economy, University of Texas. They found it non-toxic.

The South Dakota Agriculture Experiment Station³⁶ discusses the value of millet as human food and proposes to rechristen it proso, so

³¹ Carlson, A. J., et al., Chemistry of normal human gastric juice. *Amer. Jour. Physiol.*, 38, (1915), pp. 248-267. The secretion of gastric juice in man. *Ibid.*, 37, pp. 50-73.

³² Kast, L., Effect of fatigue upon gastro-intestinal motility. *Proc. Soc. Exp. Biol. and Med.*, 13, (1916), p. 79.

³³ Maxwell, L. A. I., The relation of salivary to gastric secretion. *Biochem. Jour.*, 9, (1915), pp. 323-329.

³⁴ Withers, W. A., and Carruth, F. E., Gossypol, the toxic substance in cottonseed meal. *Jour. Agr. Research*, 5, (1915), pp. 261-288.

³⁵ Richardson, Anna E., and Green, Helen S., Nutrition investigations on cottonseed meal. *Jour. Biol. Chem.*, 25, (1916), pp. 307-318.

³⁶ Nansen, N. E., Proso and kaoliang as table foods. *S. Dak. Agr. Exp. Sta. Bul.* 158, (1915), pp. 147-176.

that its name will not have association with fodder. Kaoliang is a drought-resistant grain sorghum whose seed can be milled. Avocado³⁷ is a California fruit averaging 20 per cent fat. *The United States Department of Agriculture Bulletin* on fermented milks³⁸ is valuable. The many interesting efforts of the Germans to adapt themselves to a limited food supply and to utilize all possible sources of food have already been summarized in the JOURNAL.³⁹

SUBSTANCES ADDED TO FOODS

New Food Inspection Decisions (164 and 173)⁴⁰ permit an eighth coal-tar color, a yellow, and forbid the use of the foam producing substance, saponin. This has been employed as a substitute for white of egg in meringues, frosting, fillings, marshmallows, etc. It serves "solely as a foam producer" giving "a fictitious appearance of body and therefore of food value," so "concealing damage or inferiority." In connection with color in foods Palmer's work on natural yellow is most interesting. The carotin, associated with the chlorophyll in green grass, etc., is not decomposed in the cow's body, but persists in the milk fat, body fat, blood serum, etc. Hence natural yellow butter can be obtained only when the carotin of the cow's food is high. The yellow in egg yolk, fowls' fat, etc., is xanthophyll.⁴¹ Therefore when dietary whims demand yellow egg yolks, yellow corn may be fed, and for colorless poultry flesh, not yellow corn, but skim milk. The color, added or natural, is no indication of nutritive excellence.

The use of benzoic acid in ketchups is diminishing.⁴² In 1910 of ketchups examined in Pennsylvania 90 per cent contained this preservative, and in 1915 only 24 per cent. The cause of the improvement is probably "the fact that manufacturers have found it cheaper in the end to maintain sanitary conditions, and effect, through sterilization of the product, the desired end, than to depend on the uncertain and

³⁷ Jaffa, M. E., The nutritive value of the avocado. *Univ. Cal. Agr. Exp. Sta. Bul.* 254, (1915), pp. 395-402.

³⁸ Rogers, L. A., Fermented milks. *U. S. Dept. Agr. Bul.* 319, (1916).

³⁹ Wheeler, Ruth, The war and dietetics; and Barrows, S. T., A triumph of scientific housekeeping. *Jour. Home Econ.*, 8, (1916), pp. 488 and 495. See also Lusk, G., Food economics, *Jour. Wash. Acad. Sci.*, 6, (1916), pp. 387-396.

⁴⁰ Service and regulatory announcements no. 17. *U. S. Dept. Agr. Bur. Chem.*, May 12, 1916.

⁴¹ Palmer, L. S., Xanthophyll, the principal natural yellow pigment of the egg yolk, body fat and blood serum of the hen. *Jour. Biol. Chem.*, 23, (1915), pp. 261-279.

⁴² La Wall, C. H., *Dept. Agr. Dairy and Food Bureau, Harrisburg, Pa., Bul.* 272.

questionable efficiency of a preservative." Also sodium benzoate which before the war sold for less than fifty cents a pound, at the time of the bulletin was more than \$5. "The sodium benzoate controversy bids fair to be settled in a most interesting and unexpected manner."

ENERGY

Determinations of the energy production of the human machine, so important to scientific dietetics, have continued, some of the results being rather surprising. The energy production in fast walking⁴³ is nearly twice that in slow, but in running it is slightly lower. For walking one meter slowly 0.5 small calories per kilogram body weight are produced, 0.932 for fast walking, and 0.806 for running. The latter difference is probably due to the larger amount of arm motion. With the arms swinging vigorously the metabolism may be increased 125 per cent; yet we have inclined to ignore the importance of "minor motions." Another investigation shows that the metabolism is 3 per cent lower sitting in a steamer chair than lying flat in bed.⁴⁴ It is possible that the diminished pressure on the diaphragm when the body is supported in the inclined position lessens the work of breathing enough to account for the unexpected difference. The basal metabolism of normal boys twelve or thirteen years old is 25 per cent higher than that of adults, corrected for height and weight⁴⁵—a very large increase. Obese subjects generally show no difference from lean in the basal metabolism, provided it is computed, not on basis of weight, but per unit of body surface, even though the obesity is of a most extreme type.⁴⁶ Considerable further work has been done on pathological subjects.

Comparatively few studies of the diet of groups of adults have been made during the past year. Gephart's⁴⁷ investigation of St. Paul's School was, of course, on adolescent boys, but is of great interest, because the boys consumed the extraordinary amount of 5000 calories per day. This was made up of 4350 calories supplied by the table and an additional 650 calories bought by the boys in chocolate, etc.

Very interesting as an application of recent work in nutrition to limited

⁴³ Benedict, F. G., and Murschhauser, H., Energy transformations during horizontal walking. *Carnegie Inst. of Wash., Publication* 231, (1915).

⁴⁴ Soderstrom, G. L., Meyer, A. L., and DuBois, E. F., A comparison of the metabolism of men flat in bed and sitting in a steamer chair. *Arch. Int. Med.*, 17, (1916), pp. 872-886.

⁴⁵ DuBois, E. F., The metabolism of boys twelve and thirteen years old compared with the metabolism at other ages. *Arch. Int. Med.*, 17, (1916), pp. 887-901.

⁴⁶ Means, J. H., The basal metabolism in obesity. *Arch. Int. Med.*, 17, (1916), pp. 704-710.

⁴⁷ Lusk, G., Food economics. *Jour. Wash. Acad. Sci.*, 6, (1916), p. 390.

conditions are two reports of Prof. A. E. Taylor of the University of Pennsylvania on the Conditions of Diet and Nutrition in the Internment Camp at Ruhleben, a camp for 3700 interned British civilians in Germany. He submitted the reports, after visits, through the United States Ambassador to the British Secretary of State for Foreign Affairs. The writer has not been able to see the full reports, merely the discussion of them in the *Journal of the American Medical Association*.⁴⁸ In the first, Taylor enumerates six criteria of what should constitute a complete, sufficient, and normal diet for such persons—from 70 to 90 grams of protein per day provided this contains all the needed amino acids; at least 30 calories per kilogram for those at rest or at light exercise, and a total of 3000 calories or more, if the body works; a certain amount of native fat, probably at least 25 to 50 grams per day, quite possibly necessary, not for the glycerides themselves, but for other components; the various salts required in the body; certain substances of unknown chemical nature, vitamins, found especially in vegetables and in the covering of grains; some food either freshly cooked or consumed raw. Also, Taylor says, some account needs to be taken of the habits, customs, tastes and idiosyncrasies of the subjects. The first six criteria were fairly well met, according to the first report, but the British dislike the German cooking. Also the food shipped in from England is like the food supplied by the Germans, poor in fat and rich in starch. The second report indicates a more serious situation, the diets furnished being essentially fat-free. Fish and margarin have been withdrawn.

The student of nutrition must be increasingly interested in the correct feeding of the population as a whole and therefore in all efforts to increase knowledge of diet and to correct abuse of the food supply. The twelfth Report of the Henry Phipps Institute of Philadelphia calls attention to certain very unsatisfactory conditions in that city. A recent comment⁴⁹ on the report may serve as a conclusion to this paper. "The control of the food supply of adults, to such an extent at least as to prevent disease, . . . represents, doubtless, the most important question now occupying the minds of sanitarians, the practical application of which to municipal affairs will do a great deal to prevent the occurrence of many of the intestinal affections, at least, but probably of most others also, which still flourish in large cities."

⁴⁸ Editorial, A report on nutrition in a German internment camp. *Jour. Amer. Med. Assn.*, 67, (1916), pp. 125, 126. Food abuses in war times. *Ibid.*, 67, (1916), p. 515.

⁴⁹ Editorial, Municipal control of food materials. *Jour. Amer. Med. Assn.*, 67, (1916), p. 955.

SOME RECENT CONTRIBUTIONS OF BACTERIOLOGY TO
THE HOME

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After considering some recent investigations of the pasteurization of milk, this paper will review a few papers upon the rôle of bacteria in nutrition or "bacteriotherapy" as it is sometimes called.

Considerable time and pains have been taken to establish a proper temperature at which to pasteurize milk. Th. Smith, Russell, Hastings, Hesse, Rosenau,¹ and others found that bovine tubercle bacilli in milk are not infective for guinea pigs when milk is heated at 60°C. for 20 minutes, and 60 to 63°C. (140–145° F.) has been established as the lowest safe temperature at which milk may be pasteurized and be free from pathogenic microorganisms.

There is no lack of evidence showing that raw milk is a very excellent carrier of infectious disease. Jordan,² in a splendid consideration of the subject of pasteurization of milk, has cited interesting figures. Of the cases traced to milk there is recorded a total of 346 outbreaks of typhoid fever, 137 epidemics of scarlet fever, 53 outbreaks of diphtheria, and 18 outbreaks of septic sore throat, besides cases of gastrointestinal catarrh, Asiatic cholera, anthrax, hydrophobia, hoof and mouth disease, and diarrhoea in infants. Cases are cited showing that the dairy causing the trouble was often faultlessly clean and neat, and the workers were cleanly, but proved to be innocent carriers of typhoid or diphtheria bacilli. The work of Park and Krumwiede,³ who found that 6 to 10 per cent of deaths from tuberculosis in children under 5 years, in New York, is caused by bacilli of the bovine type, and the confirmation of this work by the British Royal Commission on Tuberculosis in 1911, leaves no doubt as to the effectiveness of heating milk as a safeguard against tuberculosis in children. There is some proof that the amount of infectious disease is lowered by the pasteurization of milk in cities where it is practiced. Rosenau, Lumsden, and Kastle observed that the lowest proportion of typhoid fever was on a milk route in Washington in 1906 and 1907 where there were sterilized bottles and pasteurized milk. Sta-

¹ Cited after Jordan, The case for pasteurization, *Jour. Amer. Med. Assn.*, 59 (1912), pp. 1450–7.

² Ibid.

³ Cited after Jordan.

tistics are given for Chicago and Boston showing lowering in typhoid death rate after the pasteurizing rules were enforced.

Park and Holt⁴ found a marked decrease in infant mortality which they attributed directly to pasteurization of milk.

The bone of contention with regard to the process has been rather thoroughly fought over. Such questions as this have arisen: Is it not a shelter for the unscrupulous dairyman? Is not pasteurization a means of disguising dirty milk? May not disease germs enter the milk after it is pasteurized and thus render it more dangerous than raw milk which has not the protection of a label? Is heated milk as digestible and nutritious as raw milk? Will pasteurized milk sour normally or will it peptonize and putrefy? Are the lactic acid bacteria all killed? If not, what relation do those surviving the process bear to the other milk bacteria which survive the process? What are the keeping qualities of heated milk? Does it develop an unpleasant taste and what is the cause of this? Some very interesting and careful work has been done with regard to all these questions.

We must pass over the enforcement of pasteurizing laws and other laws regarding clean milk supplies and go to the question of whether heated milk is as digestible and nutritious as raw milk. Brenne-mann⁵ found that raw milk is more likely than boiled to produce large curds which hinder digestion. Janet Lane-Claypon⁶ found that infants, like other young animals, thrive best on the milk of their own species, and that it is immaterial, so far as nutrition is concerned, whether the milk is boiled or not. Infants fed with milk drawn from the breast of a wet nurse, and boiled previous to use, appear to thrive just as well as when the same milk is given fresh. At the end of a year, babies fed on boiled milk show no greater percentage of rickets than breast babies.

With regard to the question, "Will pasteurized milk sour normally or will it peptonize and putrefy?" there is some diversity of opinion. Housekeepers and others handling pasteurized milk observe that it sours more slowly than raw milk and oftentimes develops a peculiar unpleasant taste and a disagreeable odor. These observations have led many to the opinion that the pasteurizing processes are not satisfactory and that the milk is left in a very undesirable condition. This

⁴ *Arch. Pediat.*, 20 (1903), p. 881.

⁵ Cited after Jordan.

⁶ Report to Local Government Board, new Ser. No. 63, 1912, *Abs. Lancet*, London, April 27, 1912, p. 1140.

opinion is rather widespread and has stimulated considerable investigation of this point.

Flügge,⁷ in 1894, found that bacterial spores survive the process of pasteurization and germinate. Three peptonizing species isolated caused death when inoculated into laboratory animals. Milk cultures fed to puppies caused illness and death. Flügge went so far as to state from these observations that pasteurized milk is "dangerous." Ford and Pryor⁸ investigated this point with 78 samples of Baltimore milk taken from 21 dairies, and set out to confirm or deny Flügge's statement that "milk contains heat-resistant spores of aerobic and anaerobic bacteria which cause changes in milk, making it a dangerous article of diet." They concluded that such changes do take place when milk is heated anywhere from 65° to 100°C. and kept at anywhere from 22° to 37°C., but not when kept in the ice box at 4° to 6°C. The spores do, however, live for a long period when the samples are kept in the ice box. The authors found 65° to 85°C. to be a danger zone for pasteurization in which it will never clot normally. These investigators consider it safest to boil the milk from 10 to 30 minutes and then preserve it on ice. They state that it has not been chemically shown that the bacteria surviving pasteurization cause derangements in the metabolism of children. Tissier and Gasching,⁹ studied the organisms concerned in the putrefaction of meat and milk. After the careful isolation and identification of these organisms, they concluded that "in the absence of predisposing causes, the bacteria concerned in the putrefaction of meat and milk are not believed to cause digestive disturbances and this is supported by experiments upon man and animals. Therefore, although subsequent workers have found spores of aerobes and anaerobes surviving pasteurization, there is, as Jordan¹⁰ has said, no proof for Flügge's contention that "dangerous" peptonizing forms develop.

Colwell and Sherman,¹¹ found that pasteurization at 60°C. restrains peptonizing to the same extent as souring, and that apparently pasteurization has no constant effect in rendering the milk either more or less liable than raw milk to the development of offensive odors. Ayers and Johnson¹² have found that commercially pasteurized milk sours through

⁷ *Ztschr. f. Hyg.*, 16 (1894), p. 272.

⁸ *Bul. Johns Hopkins Hosp.* 25 (1914), pp. 270-76.

⁹ *Ann. Inst. Pasteur* 17 (1903), no. 8, pp. 540-63.

¹⁰ See 1.

¹¹ Cited after Jordan.

¹² U. S. Dept. Agr. Bur. Anim. Indus. Bul. 126, pp. 98.

the development of lactic acid bacilli which survive the heating process. They have divided the bacteria which resist pasteurization into four groups, namely acid formers, indifferent species, alkali formers, and peptonizing bacteria. According to these workers the percentage of acid formers is raised by pasteurization, while the other groups are diminished. The average percentage of lactic acid bacteria in raw milk is increased by heating for $\frac{1}{2}$ hour at 62.8°C. (145° F.) from 1.27 per cent to 4.55 per cent. As long as the pasteurizing temperature is under 76.7°C. (170° F.) the heated milk possesses a greater part of the acid group. In temperatures over 76.7°C. the group of acid formers is for the most part destroyed and the remaining bacteria belong to the peptonizing group. When different grades of milk are pasteurized in the laboratory at 62.8°C. (145° F.) and kept at room temperature three different kinds of behavior are observed. In case of good milk the acid-forming bacteria quickly develop and overgrow the other species and a normal coagulation occurs. In pasteurized milk of poor grade, the group of peptonizing bacteria quickly develop, outgrowing the acid group; there is in the beginning a lab-like coagulation; it is soured in consequence of the lactic acid bacteria, but peptonized also. The third class includes those samples of good milk in which there is an overgrowth of peptonizing bacteria; the milk is peptonized without souring.

If milk is kept in the ice box at 10°C. the growth of peptonizing bacteria is held back and their significance is less marked. The percentage of lactic acid bacteria remains for a long time the same. Occasionally after 5 days the alkali formers predominate; at other times, the acid formers.

Weigmann, Wolff, Trench and Steffen¹² have taken up the findings of Ayers and Johnson and have sought to confirm them. They had observed that milk pasteurized with the new continuous heating apparatus of Edward Ahlborn in most cases undergoes acid coagulation, but it often happens that after many days standing there occurs a change even when the pasteurized milk has the appearance of keeping; apparently there is a decomposition of the proteins. Bacteriological examination showed considerable numbers of protein-splitting bacteria accounting for the fact that the soured, coagulated milk had a bad taste. So-called "good" milk acted no differently from "bad" milk in this respect. Thorough laboratory investigation based upon these observations

¹² *Contrib. f. Bak.*, 45 (1916), Abt. II, no. 115, pp. 63-107.

of practical experience confirmed Ayers' and Johnson's finding that the relative proportion of lactic acid bacteria to the other milk bacteria is increased after pasteurization at 60° to 63°C. for 30 minutes, and they concluded that there must be fewer of them killed than of the other milk bacteria. However, comparisons of growths in plain and in sugar calcium carbonate agar, made at frequent periods after pasteurization, have shown that lactic acid bacteria, even if they survive pasteurization in considerable numbers, are not able to bring about a normal souring, because their ability to multiply, as well as to form acid, is considerably diminished. After the milk is several days old the peptonizing species develop unhindered and bring about an unfavorable change. According to these investigators 99.86 per cent of the bacteria in milk are killed by heating at 63°C. for 30 minutes, that is, for 1000 bacteria in raw milk there are 1.4 remaining after pasteurization.

While it has been shown that there are enormous dangers in the consumption of raw milk in transmitting infectious disease, and while it has been proved that pasteurized milk safeguards infants against summer diarrheas and is no harder to digest than raw milk, yet the facts pointed out by Flügge and others indicate that there is still something lacking in the palatability and souring properties of pasteurized milk. It is still left for someone to perfect a method by which milk may be freed from its pathogenic organisms and still remain palatable on standing. As Bienstock¹⁴ has suggested, the ideal would be milk prepared for use so that the pathogenic bacteria would be killed, while the lactic acid bacteria would remain alive. Since this is not possible one must resort to other means to give back to pasteurized milk the antiputrid properties of raw milk. One could add, to sterilized milk, cultures of the lactic acid bacillus, but there is a simpler means which Bienstock suggests. Since *Bacillus coli* and *Bacillus lactis aerogenes* occur in good water as well as in bad, he suggests the addition of tap water to sterilized milk.

Researches upon the harmless species which are parasitic to man are less widely known than those upon species which set up definite pathological processes, probably because of the tremendous importance of the latter in medicine and surgery. However, the literature is not lacking in studies upon the parasitic flora of the mouth, the skin, and the intestine. It is of the last mentioned that I wish to speak. The names of

¹⁴ *Archiv fur Hygiene*, 39 (1901), p. 390.

Nuttall and Thierfelder, Metchnikoff, Schottelius, Escherich, Moro, Tissier, Bienstock, Rodella, Schmidt, Strasburger, Klein, Passini, Herter, and Kendall are as closely linked with the investigations of normal parasitic intestinal flora as are those of Koch, Shiga, Eberth, Pfeiffer, Gaffky, Gruber, Widal, Flexner, and others, with investigations of parasites which set up a specific disease condition in the intestines.

The classic researches of Metchnikoff, Nuttall and Thierfelder, and Schottelius upon the determination of the rôle of the bacteria of the intestine are too well known to deserve more than mention. Escherich, Moro, Tissier, and Rodella have been interested in the normal parasitic flora of children, while Bienstock, Passini, Metchnikoff, Herter, Kendall, and others have studied that of adults.

Since the sour milk therapy has become popularized very interesting papers have come out; and there is some definite information in answer to such questions as, Is it better to take butter-milk or *Bacillus bulgaricus* tablets? Is it possible by ingesting such acid resisting organisms as *Bacterium acidi lactici*, *Bacillus bulgaricus* or *Bacillus acidophilus* to establish them parasitically in the intestine, thereby preventing the development of putrefactive bacteria to which they are antagonistic?

Kendall¹⁵ has pointed out that those species that are capable of fermenting carbohydrates and putrefying proteins always attack the former first and produce end products which are harmless and easily eliminated. Basing the treatment upon this observation and the further observation that pathogenic microorganisms elaborate less of their toxins when grown in sugar-containing media, Kendall gave lactose to infants in cases of bacillary dysentery. Theoretically at least, the advantages of such a diet are the following: (1) the dangers of the former starvation treatment are avoided; (2) the lactose absorbed spares protein in metabolism; (3) lactose is preferred by the bacteria and protein is spared in the intestine; (4) harmless products result from bacterial decomposition of carbohydrates while from proteins toxins may be produced; (5) lactose is the normal carbohydrate of infants and its slower absorption both avoids overloading the blood and prolongs its beneficial effects on intestinal conditions. *Bacillus coli*, a normal parasite, becomes antagonistic to *Bacillus dysenteriae* and forms acids which inhibit the growth of *Bacillus dysenteriae*. Of thirty-nine cases reported, 20 lived, 19 died; of the 19 that died 8 received no sugar.

¹⁵ *Jour. Med. Research*, 25 (1911), p. 117.

Torrey¹⁶ reported observations of the flora of typhoid patients. When a high calorie diet containing considerable carbohydrate was given the flora was simpler and more nearly resembled that of the nursing. When this simple flora was found (principally *Bacillus acidophilus*) the fever ran a mild course.

Rettger¹⁷ found that chicks fed upon milk diet showed greater resistance to *Bacillus pullorum*, the bacillus of white diarrhea, than those given the ordinary chick feed. Rettger attributes this resistance to the lactose in the milk, and suggests that it is a property peculiar to lactose, for the other sugars did not give such a favorable result.

Rahe's¹⁸ results concerning the so-called implantation of *Bacillus bulgaricus* throw light upon the question, Can one implant acid resisting organisms in the intestine as a safeguard against putrefaction? Even when a liter of a 48 hour-old culture of *Bacillus bulgaricus* was ingested the organisms did not become parasitic and disappeared from the intestine shortly after the ingestion of the cultures was stopped.

In summing up this point it may be said that a rational bacteriotherapy applicable to all classes of cases is not yet worked out. There is definite information concerning many of a normal parasitic species. Their morphological and biochemical activities are pretty definitely understood. Concerning their action in vivo the threshold has only been approached and complicating factors are met on every hand.

SUMMARY

1. The few recent contributions here cited offer excellent examples of the manner in which definite and reliable information is accumulating on subjects related to the problems of pure food and nutrition.

2. The enormous dangers in the consumption of raw milk lead us to look to pasteurization as a safeguard, even if, as careful experimentation and practical experience show, it leaves the milk in an imperfect condition. There is opportunity for perfection of the process.

3. With more knowledge of the biochemical properties of the bacteria of the digestive tract, with the study of their relationships in health and disease, will come an understanding of their rôle in nutrition.

¹⁶ *Jour. Infect. Dis.*, 16 (1915), pp. 72-108.

¹⁷ *Jour. Experimental Medicine*, 21 (1915), 365-88.

¹⁸ *Jour. Infect. Dis.*, 16 (1915), p. 210-20.

Notes. The University of Illinois Dairy pasteurizes its milk for city trade in a cream ripening fat with a steam coil at 140°C. for twenty minutes to one-half hour.

VITAMINES, OR LIFE-PRESERVERS

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The word "vitamine" may be translated "essential to life," and the translation may pass for a definition, since it is descriptive of nearly all that is known about this class of compounds. The definition sets no limits as to the chemical nature of the compounds that may be included as vitamines, because little is as yet known on that matter.

The name vitamine was given by Casimir Funk in 1912¹ to a preparation, made from the outer layers of rice grains, which was able to cure pigeons of the disease polyneuritis, brought on by a diet of rice from which the outer layers had been removed by the "polishing" process. He named the preparation "essential to life" because his experiments seemed to prove that it was the lack of this essential substance which brought on the fatal polyneuritis in pigeons and beriberi in men and women whose diet was restricted to polished rice. He very soon found yeast to be a very good material from which to obtain the life-preserving preparation, and since that time several investigators have prepared, from a number of different foods, substances which have shown a similar curative or preserving power against beriberi and other so-called "deficiency" diseases.

As long ago as 1897 Eijkman came to the conclusion that the prevalence of beriberi in the Far East is due to the custom in those countries of living for several months at a time almost exclusively on decorticated (polished) rice. Persons who used the unhusked rice or parboiled (cured) rice, which had been previously steamed to remove the pericarp, did not contract the disease. A large number of investigations followed this important discovery, and are still going on. Various theories have been advanced as to the cause of the disease. Theories of bacterial infection, of toxic substances in the food, and of phytin or other organic phosphorus deficiency, have all been enticing; but the vitamine explanation is now generally accepted.

Much of the experimental study has been carried out with pigeons, because in them the beriberi-producing foods very quickly bring on a well-defined condition of polyneuritis, which is probably the same as beriberi in man, and the cure of which may be used as a test of the

¹ Funk, *Jour. State Med.*, 20 (1912), pp. 341-368.

efficiency of any given food or treatment. In them cures with the anti-beriberi, or anti-neuritic, vitamine were first effected.

And the cures are fairly marvelous. As the disease develops, the birds become lame and inactive, lose weight rapidly, and are drawn out of shape, especially with the neck muscles so contracted that the head is laid over on the back. After reaching that condition, if left to themselves, they would usually die in twenty-four hours or less; but, if 2 to 4 milligrams of the vitamine preparation are injected intravenously, they revive and appear to be cured in less than three hours. If they are then fed on the normal corn diet, they show no return of the disease.²

Marvelous as the power of the anti-beriberi vitamine is, however, it seems to be but one of a class of agents upon which healthy life is dependent. As the work of Koch and Pasteur revealed to the world a group of living organisms infinitesimal, but nevertheless dominant as health preservers or destroyers, so also an inorganized group of infinitesimal health-preservers is being revealed in the train of the discovery of the anti-beriberi vitamine. An understanding of this vitamine group will surely be a help to the physicians and dietitians in the fight against disease.

Scurvy, for instance, has long been known to be associated with the use of a restricted diet lacking in fresh vegetables and meats. It frequently develops on shipboard when only bread foods and canned goods are used, also in times approaching famine. Fresh vegetables and fruits and their juices, and especially lime and lemon juices have been recognized as remedies which bring about a rapid recovery. It is now believed that the recovery is due to an anti-scorbutic vitamine, or to several anti-scorbutic vitamins, in the lemon juice and fresh vegetables. Epidemic dropsy, infantile scurvy, human multiple neuritis and peripheral neuritis, Basedow's disease, ship-beriberi, rickets, and pellagra have all been attributed to similar causes. All of these are thought to be due to deficiencies in the diet. The exact nature of the deficiencies has not been determined, but it may be that against each there is a specific vitamine.

Moreover, beside all these forms of minute extras in foods something else is there which makes young animals grow. Hopkins,³ Osborne and Mendel,⁴ McCollum and Davis,⁵ and others have shown that artificial

² Funk, *Jour. Physiol.*, 48 (1914), p. 228.

³ Hopkins, *Jour. Physiol.*, 44 (1912), p. 425.

⁴ Osborne and Mendel, *Jour. Biol. Chem.*, 15 (1913), pp. 311-326.

⁵ McCollum and Davis, *Ibid.*, 15 (1913), pp. 167-175.

mixtures of pure chemical compounds, however well selected and combined, do not support the growth of young rats, mice, and guinea pigs, for an indefinite time; but the addition of a small percentage of some natural food, such as egg-yolk, milk, or butter, or of yeast, is sufficient to restore and continue the growth. Evidently the growing animal requires something besides the food constituents usually considered, and the natural fresh foods supply that growth-stimulating accessory.

There is doubt at present as to whether this growth-promoting substance is to be classed as a vitamine. Funk's⁶ attempt to prove that it is identical with the anti-beriberi vitamine of unpolished rice is not successful. This phase of the question is being actively studied. If the substances were present in larger amount and could be isolated individually, of course the identity or otherwise could be determined chemically; but as it is they must be judged purely from the physiological effects of preparations made under various conditions.

Most of the physiological experiments which have proved the existence of a distinctive growth-promoting substance have been either such as made use of a ration from which fat and the fat-like lipoids were excluded, or experiments in which the material added to reestablish growth was one which contained fat as a somewhat prominent feature. In fact, with some species butter seems to be one of the best agents to use. It has therefore come about that the failure to grow has been attributed to the lack of lipoids; but unless Funk's analysis is misleading, if the growth substance is a lipoid, it is not vitamine. The theory of the lipoid nature may be incorrect. It has lost some of its support by the observation that none of the common lipoids introduced in a pure condition into the ration remove the deficiency.⁷ It is quite possible that vitamine exists in combination in fat, or, because of its solubility, is taken out from the food by the processes used in taking out the fat. In that case, the injury supposed to be done by lack of lipoid may in reality be due to lack of the vitamine associated with the lipoid. Osborne and Mendel⁸ feel that they have disproved that supposition with regard to butter. Butter, which is in the main a mixture of fats, does unquestionably possess a growth-producing power, and Osborne and Mendel find that power emphasized in the "butter oil" remaining after processes such as would tend to free it from the heavier fats and from substances other than fats. They say that the "butter oil"

⁶ Funk and Macallum, *Ibid.*, 23 (1915), pp. 413-419.

⁷ MacArthur and Luckett, *Ibid.*, 20 (1915), pp. 161-174.

⁸ Osborne and Mendel, *Ibid.*, 16 (1913), pp. 423-437.

contains neither nitrogen nor phosphorus, and accordingly claim that it cannot include vitamine or a phosphorized lipid. On the whole there is considerable indication of two types of accessory substances essential for growth, one of them lipid in nature and the other not.

The question of the lipid nature or the lipid association of any of these food accessories has a bearing on the interpretation of their functions within the body. The functions must be judged from their location in the body when known, from such properties as can be ascertained, and from the symptoms produced by their withdrawal from the ration. Some of the animal tissues which have been found to be most rich in vitamine are tissues which are rich in lipid, such as brain, heart muscle, and egg-yolk. According to the investigation of Miss Evelyn Cooper,⁹ however, vitamine does not enter into the constitution of the brain or heart muscle and is not a lipid. Evidence was obtained of a lipid-like substance in brain and in egg yolk which has a marked affinity for vitamine. Very probably such a substance serves to hold the vitamine in store till needed by the organism.

With regard to the functions of the vitamines but little definite evidence has been collected as yet. The different symptoms produced indicate that they serve different purposes. The neuritic symptoms of beriberi have led to the thought that the anti-neuritic vitamine is essential for normal nerve activity, and in birds that have died from polyneuritis the nerve and brain tissue is found to be degenerated. The right side of the heart is very much enlarged in fatal cases of this disease, and of scurvy¹⁰, and that has been explained as a secondary effect of nerve degeneration. None of this evidence indicates the exact work of the vitamines.

The extreme effectiveness of vitamines in proportion to their amount suggests a possible relation to the hormones, and other components of the internal secretions of such organs as the thyroid, thymus, and suprarenals. The view that there may be such a connection has some support from the fact that the glands of internal secretion in pigeons suffering from beriberi have been found to be greatly diminished in size and to show marks of structural degeneration.¹¹

In still another direction are a few experiments which indicate that the carbohydrate metabolism is affected by the amount of vitamine supplied; a lack of vitamine in the diet resulting in an excessive con-

⁹ Cooper, *Biochem. Jour.*, 8 (1914), pp. 347-354.

¹⁰ Darling, *Jour. Amer. Med. Assn.*, 63 (1914), pp. 1290-1294.

¹¹ Funk and Douglas, *Jour. Physiol.*, 47 (1914), pp. 475-478.

version of the glycogen of the liver into sugar, and the addition of vitamine from yeast to such a diet being accompanied by a formation of glycogen in the liver and by less blood sugar. After a fat-free vitamine-free diet, the glycogen content of the liver was increased.¹²

A curious observation with regard to the effect of carbohydrate ingestion upon the vitamine requirement has yet to be interpreted. Several observers have noticed that with the diet of polished rice (lacking vitamine and rich in carbohydrate) pigeons succumb more quickly when large amounts are eaten. The same is true, to a less extent, with a vitamine-poor diet rich in protein or fat. It might be expected, naturally, that the opposite would be true, because with the very small amount of vitamine present in the rice it might be supposed that by eating a larger amount it would be possible to obtain a better protection. The unexpected reversal holds also in human beriberi. In nearly all epidemics reported it is observed that individuals who are well nourished so far as quantity of food is concerned are more liable to the disease than are the underfed. Bradden and Cooper¹³ carried out controlled experiments with a view to determining whether the requirement for anti-neuritic vitamine is actually increased by an increase of carbohydrate ingestion. They conclude that it is and that for the maintenance of health "the intake of active substance must be adjusted, so as to stand in some quantitative relation to the ration of carbohydrate ingested, and it is when this necessary balance is not maintained in the dietary that beriberi results." The precise relation which must exist between the supply of active material and the amount of carbohydrate metabolized has not been ascertained, nor has it been determined for the protein and fat.

If such a relation holds as Braddon and Cooper think they have proved, it complicates somewhat the problem of the physician or dietitian who is fighting a deficiency disease by regulation of the diet. That is, he must the more insist on the use of a mixed diet with a liberal supply of the vitamine-containing foods, and he must at the same time urge the avoidance of a high excess of carbohydrate-rich foods. It is not probable that the relation between the amount of carbohydrate and the amount of vitamine needs to be adjusted in any very exact way, as their words might lead one to think; but a satisfactory balance is doubtless easily attained if attention be given to the two points mentioned.

¹² Funk and Schörmborn, *Ibid.*, 48 (1914), pp. 328-331.

¹³ Braddon and Cooper, *Jour. Hyg.*, 14 (1914), pp. 331-353.

In selecting foods for their vitamins it is necessary to have in mind some of the processes which may lower the vitamin content. The removal from rice by the polishing process has been mentioned. It is found true also of wheat, corn, and other cereals that the larger part of the vitamin is contained in the bran portions. The coarser, unhulled cereal preparations, therefore, have more protective power than the fine bolted flours. Evidence of the injurious effect of a diet consisting largely of highly milled white flour is reported from Newfoundland and Labrador.¹⁴ In mid-winter and spring, and in summer while they are on their fishing vessels the people are reduced to white bread and tea. At such times what seems to be true beriberi develops. Dr. Little testifies as to the cure:—"A patient with beriberi, whose symptoms have not gone so far as to be immediately dangerous, if put on a diet including fresh meat, whole wheat bread, beans, peas, macaroni, and potatoes, will, within ten days, recover from all functional symptoms." The same trouble attacks their hens. As the natives say, the hens fed exclusively on white bread and water "get leery and give up."

Another process which reduces the activity of food is drying. Fresh beans, peas, and other legumes are relatively rich in vitamins but the dried ones less so. Some foods lose their curative power simply by being kept, and canned goods usually have little. The anti-scorbutic vitamin is said to be much more stable than the anti-neuritic. The anti-scorbutic vitamin is fairly stable in acid media, which may be a reason why lemon juice has been found so effective a cure for scurvy. The anti-neuritic vitamin is soluble in water, and if unhusked or parboiled rice is soaked in an excess of water for some hours and the water thrown out, the rice loses some of its protective power. Probably the same would be true of other soaked foods. Solutions of the anti-neuritic substance lose their activity on being boiled a few minutes, especially if alkaline. Milk on being heated to 100° C. for some time loses its anti-scorbutic property, and, if forming the exclusive diet of children, may give rise to the appearance of infantile scurvy. The heating of milk has also been thought to be a cause of rickets in children.

Voegtlin gives the following table¹⁵ of foods arranged with reference to their anti-neuritic and anti-scorbutic powers, in each case those richest in vitamin being placed first:

¹⁴ Little, *Jour. Amer. Med. Assn.*, 58 (1912), pp. 2029-2030; 63 (1914), pp. 1287-1290; Ohler, *Jour. Med. Res.*, 31 [N. S. 26] (1914), pp. 239-246.

¹⁵ *Scientific Monthly*, 2 (1916), p. 292.

ANTINEURITIC PROPERTIES		ANTI-SCORBUTIC PROPERTIES	
Relatively rich	Relatively poor	Relatively rich	Relatively poor
Brewer's yeast	Sterilized milk	Fresh vegetables	Dried vegetables
Egg yolk	Sterilized meat	Fresh fruits	Dried fruits
Ox heart	Cabbage	Raw milk	Sterilized milk
Milk	Turnips	Raw meat	Canned meat
Beef and other fresh meat	Carrots and other vegetables of this type		Dried cereals
Fish	Highly milled cereals		Pork fat
Beans	Starch		
Peas	Pork		
Oats			
Barley			
Wheat			
Corn			

As a practical rule resulting from the whole investigation of vitamins and their occurrence, so far as it has gone, it may be well to bear in mind the suggestions which Vedder made for the prophylaxis of beriberi. He recommends that: (1) If bread is the main article of diet, it should be made of flour containing the bran; if rice, it should be the unpolished. (2) Beans, peas, and other legumes should be eaten at least once a week. Canned legumes are to be avoided. (3) Fresh vegetables or fruit should be used at least once, better twice, a week. (4) Cereals (unhulled) should be included in all soups. (5) When corn is the principal article of diet, the yellow meal, that is, that made from the whole grain, should be used. (6) Potatoes and fresh meat should be used at least once a week, preferably daily. (7) The use of preserved foods is to be avoided.

These recommendations are made for subjects who have been on such a diet as to have reduced the supply of vitamins in the body to the dangerous point. It is evident that most classes in America do not need to give especial attention to the matter for themselves; but some groups are undoubtedly near the margin of safety, and the spread of pellagra among us, especially in the Southern States, is evidence of the need of preventive measures in some quarters. To the educated public in general doubtless the chief interest in the whole matter is to be found in the development of a new and vital field of investigation. It is to be expected that out of the investigations there will come many revelations with regard to normal physiological processes. To a student the literature of the subject is fascinating.

HOW THE SOLDIERS OF EUROPE ARE FED¹

MRS. MELVIL DEWEY

The enormous task of feeding armies has been most carefully worked out in every detail. Some one has said: "The army travels upon its stomach." Soldier's rations must not only be adequate in amounts but must be carefully balanced, for the quality of the fight depends largely on the quality and quantity of the food. Supply trains carry traveling kitchens, field bakeries, and fireless cookers which are built into the carts. They are loaded up in the morning, at noon they halt and a supply of hot coffee, soup, or stew is ready to supplement the bread which the men carry in their haversacks. Fresh bread is given occasionally to relieve the monotony of hard tack. So large a working force and so many guards are required that this total service of the rear, as it is called, uses over 20 per cent of the men called into service. Old men are largely chosen for these duties so that the pick of the fighting strength stays with the fighting line. Every effort is made to supplement the diet by fresh meat and vegetables levied or bought in the immediate vicinity of the troops. This living off the country is carried much farther in Europe than in British and American practice. In home territory or friendly country, supplies are paid for at once; in hostile districts they are taken without payment.²

It is claimed that the Turks were the first to make a fixed allowance per capita in feeding their army. France boasts that her soldiers are the best fed of all; but the Russian is undoubtedly the most liberally fed of any of the armies of the world. Germany first worked out a scientifically balanced ration and has long held that she was supreme in this field, but England says:

[The Germans learned] that in the art of provisioning an army they could teach nothing to the British, and that the completeness and efficiency of the German commissariat system was far excelled by that which . . . kept our men at the highest pitch of efficiency. (See London Times History of the War, Part 47, vol. 4, July 13, 1915.)

¹ Presented at the meeting of the Institution Economics Section of the American Home Economics Association, Lake Placid, 1915.

² Rules of land warfare. "Requisitions in kind shall not be demanded—except for the needs of the the army of occupation.—They shall be paid for as far as possible in cash; if not, a receipt shall be given and the payment of the amount due shall be made as soon as possible."

The staple items of the ration must stand heat and storage without serious loss in nutriment and flavor. In all nations these consist of about the same articles—fresh or salt meat, hard or fresh bread, rice and peas with small portions of sugar, salt, and coffee, varying in proportions according to national differences in custom which always play a powerful part in dietetic matters. A comparative table of rations is added, which has been compiled from material furnished by the War College in Washington, which is a translation from the *Revue du Service de L'Intendance Militaire*, vol. 26, 1913. Doubtless many changes have been made during the progress of this war but this list is considered authoritative up to 1914. Figures in brackets are not included in footings. No calories are given for British, Belgian, and Turkish rations, and no footings of grams for Austrian and United States.

TABLE 1
Army field rations compared, grams

	BRITISH	BELGIAN	FRANCE	ITALIAN	RUSSIAN	GERMAN	AUSTRIAN	TURKISH	UNITED STATES
Bread.....	567	750	750	750	1025	750	700	900	454
Butter.....								10	
or fat.....							20		
Meat.....	567	450	400	200	410	375	400	250	(396) or 340
Bacon.....	113		30	15					
Cheese.....	85								
Vegetables, fresh.....	(226)								
or.....									
Vegetables, dry.....	57		60	50		17	250	100	113
Tomatoes.....									283
Coffee.....			16	10					32
Coffee conserve.....							50		
Tea.....	18								
Sugar.....	85	45	21	15	13	17			68
Jam.....	113								
Prunes.....									36
Salt.....	14								4.5
Crushed wheat.....								150	
Oatmeal.....					136				
Paste.....				(200) or 180					
Rice.....		30		(250cc.)			(200cc.)		
Wine.....									
Total grams.....	1587	1275	1277	3394	1601	1319	3278	1310	4615
Total calories.....			2943		3702	3393			

British and United States rations are estimated in pounds and ounces but for convenient comparison these have been translated into grams, 1 ounce being equal to 28.35 grams.

TABLE 2
Table showing components and quantities of various rations U. S. Army

A. GARRISON RATION		B. FIELD RATION			RESERVE RATION
Articles	Quantities	No. 1 quantities	No. 2 quantities	No. 3 quantities	Quantities
	ounces	ounces	ounces	ounces	ounces
Beef, fresh	14		14	14	12
Bacon, issue	3.6	12			
Flour, issue	18				16
Hard bread		16			
Bread			16	16	
Baking powder	.08				
Beans	1.2	4	4	4	
Rice	.8				
Potatoes, fresh	14		14	14	
Onions, fresh	4			2	
Tomatoes	2	10	5	2	
Prunes	.384	1.28	1.28	.384	
Jam	.64			.64	
Apples, evap.	.128			.128	
Peaches, evap.	.128			.128	
Coffee, R. & G.	1.12	1.12	1.12	1.12	1.12
Sugar	3.2	2.4	2.4	3.2	2.4
Milk, evap.	.5				
	gill			gill	
Vinegar	.08			.08	
Pickles	.08			.08	
	ounces			ounces	
Salt	.64	.16	.16	.64	.16
Pepper, black	.04		.02	.04	
Cinnamon	.014				
Lard	.32			.64	
Lard substitute	.32				
Butter	.25				
Oleomargarine	.25				
	gill				
Syrup	.32				
	ounces				
Flav. extract, lemon	.014				
Protein, grams	146.8	110.9	146.9	146.6	81.3
Fat, grams	173.5	236.8	143.4	161.5	234.2
Carbohydrates, grams	65a.9	510.0	479.7	506.9	404.9
Heat, calories	4761.0	4615.0	3797.0	4068.0	4052.0

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RATIONS—RUSSIA

Field rations of Austrian and Russian army. *L'Illustration*, Aug. 22, 1915, page 157.

Rations (for privates) Chapter 12, page 4. (In Russian) *Pekhotn. Uchebnik dlia unter ofitserov*.

Information in relation to rations in the Russian army—method of using them—how obtained. *Rivista Militare Italiana*, April 16, 1915, pages 727-739.

FREDRICK ACCUM AND HIS WRITINGS ON FOOD
CHEMISTRY

ANNA H. WHITTELSEY

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Fredrick Accum was born in Buckeburg, Westphalia, in 1769.¹ Nothing is known of his early life, except that he was by profession a chemist. In 1793 he went to England where he soon made a name for himself as a teacher, lecturer, and consulting chemist. He became professor of chemistry in the Surrey Institution in 1809, where he lectured upon "Operative and Philosophical Chemistry," upon "Mineralogy," and upon the chemistry of arts and manufactures. He did much by his work and writings to promote the lighting of cities by gas. In 1822 he returned to Berlin where he remained as professor in a technical institution until his death in 1838.

He was the author of a number of scientific works, among others, *A System of Theoretical and Practical Chemistry*, a crystallography, several books on mineralogy, treatises on gas lighting, and two books of especial interest from the point of view of Home Economics, namely, *Culinary Chemistry*, published in 1821, and the *Adulterations of Food*, which antedates it by one year. These two volumes are of much value to students of Home Economics who wish to trace the development of the subject as a distinct branch of learning.

Accum in the first pages of his *Culinary Chemistry* states two truths of which the importance is not fully realized even today after a lapse of nearly 100 years—namely, that a kitchen is a chemical laboratory and that cookery is one of the least cultivated branches of chemistry. The amount of chemistry set forth in this book, however, is slight compared with that in "*Adulterations of Food*," and is chiefly interesting as showing a few of the quaint theories that were current at that time, especially in regard to the operations of cooking.

The effects of cooking meat by direct application of heat, for example, are said to be due to the development of gelatin and "osmazome" (extractive matter of meat) from the smaller vessels and a combination with these of a portion of the fat liquefied by heat.

The agreeable taste of roasted meat is due to "empyreuma, combined with a minute quantity of ammonia, which is soon developed on the sur-

¹ *European Magazine*, 77 (1820), pp. 483-486.

face of the fat, by the partial charring—not of the fat itself, but of the cellular membrane in which it is enveloped.”

In the light of modern knowledge Accum's ideas in regard to the agency of oxygen in the putrefaction of canned goods are interesting. “The tin canisters being closed during the exposure to heat, must necessarily contain with the included matter some portion of air.” The effect of the heating is to produce a combination of the oxygen of the air with the included matter. If the combination is incomplete, putrefaction takes place. He proves these statements by reference to the well-known fact that a can which has been opened and closed again (thus letting in air) without application of heat soon putrefies; but after heat is again applied after closing the can the enclosed materials can be preserved as at first! A theory on this matter formulated by Gay-Lussac is quoted at length (page 217) but is called “rather hypothetical and unsatisfactory.”

“Adulterations of Food” is of interest, both because it shows the conditions in England at this time in regard to the adulteration of food, and because it reveals the condition of the science of chemistry early in the nineteenth century. It is evident that the adulteration of food was gross and extensive and that its existence was quite unknown to the majority of people.

The adulteration of many food materials is discussed, including bread, alcoholic liquors, tea and coffee, cheese, spices, vinegar, cream, confectionery, catsup, and custards. There are chapters, also, upon water, including discussions of the characteristics of pure water and tests for impurities, and chapters upon the dangers of using copper and leaden utensils in the preparation of foods.

It is interesting to know that at this early date such practices were common as the sophistication of pepper by adding artificial pepper corns made from oil cakes, clay, and cayenne pepper; the adulteration of ground pepper by mixing it with pepper dust—that is, the sweepings from pepper warehouses, known as “P. D.” and even the sweepings of the sweepings known as “D. P. D.,” dirt of pepper dust; increasing the acidity of vinegar by the addition of sulphuric acid; the adulteration of confectionery by the substitution of clay for sugar and the use of coloring matters containing lead and copper.

Tests are given in most cases whereby the adulteration may be detected, provided such tests are known. Most tests are for inorganic substances, and such tests as those for the adulteration of foods with

deleterious vegetable substances were, as Accum says of such adulteration in the case of beer, "beyond the reach of chemical analysis." Ground coffee was adulterated with scorched peas and beans. As no method of detection was then known, advice was given not to buy *ground* coffee. All microscopic tests are lacking.

The tests are practically the same as those in use at present and include tests for magnesia, lime, sulphates, chlorides, carbonates, lead, copper, iron, calomel, alum, and tartaric acid. The hardness of water is tested by soap solution. Rice or arrowroot powder is detected by iodine, turmeric by its change of color with alkali, and dissolved oxygen in water is determined by the oxidation of ferrous sulphate or "nitrous gas."

A few quantitative tests are mentioned. For instance, the determination of the freedom of calcined magnesia from carbonates by weighing the material before and after treatment with dilute sulphuric acid.

The chapter on water analysis includes some quantitative tests to be applied in the analysis of the ash. Carbonates are determined by the difference in weight of the precipitate given by barium chlorid before and after treatment with nitric acid; chlorids by precipitation as silver chlorid and weighing; calcium as calcium sulphate; magnesium as magnesium phosphate; sodium as sodium chlorid; and iron by precipitation with ammonium benzoate and weighing as "protoxid."

The remarks upon the characteristics of good water for drinking and other purposes are interesting. Stress is laid upon the mineral constituents as affecting the softness of the water, which, according to Accum, is the most important quality of good water. Indeed most of the discussion on water hinges on the relative hardness or softness of waters from various sources. About 20 pages are devoted to the discussion of the dangers from lead in drinking water due to storage in leaden reservoirs, and the use of lead-lined pumps. The dangers from contamination of water with animal matter are dismissed with a few words. In regard to the amount of impurities that exist in the Thames, at London, after having received the contents of the sewers, drains, and water courses of a large town, it appears, "from the most accurate experiments that have been made, that those kinds of impurities have no perceptible influence on the salubrious quality of a mass of water so immense, and constantly kept in motion by the action of the tides." Accum does suggest, however, that the putrefaction of Thames water when used as sea store is due, in part at least, to the presence of this "prodigious accumulation of animal matters."

EVA M. BENEFIEL¹

AN APPRECIATION

MAMIE BUNCH

University of Illinois

In the passing of Miss Eva Benefiel, late County Adviser in Home Improvement for Kankakee County, Illinois, and probably the first woman to hold such a position in a northern state, the Home Economics movement has lost an able worker. Miss Benefiel was unusually well adapted for her work. She had lived on a farm and had experienced the labor conditions, isolation, and the inconvenient surroundings common to so many farm homes. She had taught in the rural schools and realized the magnitude of the school problems in sanitation, in nutrition, and in neighborhood coöperation. She had had four years' technical training in the Home Economics Department of the University of Illinois, followed by six years' teaching of Home Economics in high schools. She had demonstrated and lectured before women's clubs, teachers' institutes, and other organizations.

She was athletic, musical, seemingly in perfect health and carried always an impression of sunny optimism and abundant vitality. She entered heartily into any worthy community effort and was a natural leader. Little annoyances received scant recognition from her. She was too busy with the big, positive features of community development to pay attention to the discouraging talk of pessimists. But she succeeded in getting pessimists to listen to her assurance of possible achievements; in fact, she got them to do for themselves things they thought could not be done. She made Home Improvement a common cause in which all cliques and factions could unite. People who had lived in the same neighborhood for years without knowing each other save as members of different churches, different lodges, or different political parties were brought together in the common effort to improve home life in Kankakee County.

Miss Benefiel had a keen sense of values. She found something very good in every community to build on, and directed the effort in that region accordingly. Neighborhoods were not set at strife with each other in competition, but rather each community was led to contribute its share toward a collaboration which should show a wide range in

¹ Miss Benefiel was drowned while bathing in the Kankakee River, July 31, 1916.

home improvement and in community ideals. In one year she had shown to the women and girls of Kankakee County a great variety of ways of making farm and town life absorbingly interesting and worth while. Under her guidance the girls found commonplace tasks develop into interesting, individual problems, and the women awakened to a keener responsibility regarding neighborhood conditions.

That her vision was shared by the progressive women of the Kankakee County Home Improvement Association is shown by the fact that they will continue the work Miss Benefiel had so well begun. They have selected as her successor Miss Jessie Fay Edmundson, a young woman whose preparation for the work has been very similar to Miss Benefiel's.

Miss Benefiel recognized the necessity for systematic and supervised recreation for young people, and her last service to her girls was in directing the camp life of one of the clubs. Her sudden death recalls vividly a warning sounded by Miss Alice Ravenhill at the Seattle meeting of the American Home Economics Association. Miss Ravenhill emphasized the lack of economy shown by enthusiastic Home Economics workers in spending their vital energy too freely. She pointed out how frequently it has happened that a woman, whose preparation, experience, and accomplishment had placed her where we might look to her for leadership, had died suddenly; her life snuffed out by some unusual shock from which the system was too fatigued to rally, because the ambitious woman had spent all her energy—forgetting the necessity for a reserve.

Miss Benefiel was so thoroughly interested in her project that even on her vacation, those who met her at Ithaca or in Washington will remember, her sole thought was to collect material and ideas for her work. It is much to be regretted that with her enthusiasm she had no idea of the cost of fatigue. Her work will go on, her influence remains, though we cannot but wish she might have continued here the project she had so well begun.

THE QUESTION BOX

To the JOURNAL OF HOME ECONOMICS:

"Can you tell me where I can find material or where I can visit an institution that has worked out scientifically the organization of a girls' dormitory along modern lines of hygiene and efficiency? I want to inform myself on the number of employees required, hours, division of duties, privileges, and other questions of organization, and also as to kitchen and dining room equipment. The School is to be in the Middle West and the scale of living is that which parents expect when they pay \$500 or \$600."

This question has been answered tentatively by letter. Can some one of our readers give the information needed or refer us to schools where these problems have been worked out?

A request has come for literature on this subject:

"*Resolved* that the average woman on the farm does not receive her due proportion of the family income for home conveniences."

Can any one furnish references?

Question: A physician has granted the use of lemons to a patient but refused her oranges, apparently on the ground of the difference in the kinds of acid present. Is there any justification for this?

Answer: The preclusion of oranges from the diet of a patient who has been granted the use of lemons, on the ground of the difference in the kind of acid present, is not justified, since lemons contain from 6 to 9 per cent of citric acid, while oranges contain from 1 to 2.5 per cent of citric acid.

FOR THE HOMEMAKER

CHILDREN'S CHRISTMAS GIVING

ERNESTINE P. SWALLOW

Every opportunity to train children so that in later years they shall be generous, happy, and wise givers should be used, and Christmas offers a special chance to give this training in a natural and simple way.

The joy that belongs to those who give and those who receive; the sacrifice that is a part of true giving; the thoughtfulness that considers the needs and tastes of the recipient; the self control that limits gifts to one's legitimate resources; the sense of social responsibility that forbids harming any one, even remotely, through giving: these may be learned unconsciously at Christmas time far more effectively than they could be taught by precept.

Part of the delight of giving is in choosing the gift. The parents who buy things themselves and merely hand them over to the children to give, or who put the children's names, as the givers, on gifts they have had no part in selecting, deprive those children of their rights and of an understanding of the real happiness that lies in doing for others.

Underlying true giving there must always be the spirit of love and sacrifice. The gift that costs us nothing is of small value in the giving. Therefore the children should earn the money, or at least a certain portion of it, with which to buy their gifts for Christmas, or save it at some sacrifice of their own pleasure. They should also put thought and work into their giving. As many gifts as possible should be of their own making, and, when this cannot be, they should at least be of their own choosing, and there should be some personal touch, if only a message written by their own hand, for "the gift without the giver is bare."

Children should learn to be thoughtful givers, deciding wisely to whom to give and what to give. With the mother's help they should make a list of those to whom they are to send Christmas remembrances. No name should appear there, where a gift would mean to the children only the payment of a debt. To give to anyone just because one has

given to us is an unworthy motive and makes the gift, as a gift, valueless. Find out those to whom the children would like to give as an expression of their love and friendship, and help them add to this list some to whom they can give because the gifts are needed or because they will bring happiness. Help them decide with care and thought and needed advice what their gifts shall be. See that as far as possible the gifts are something that will give pleasure in themselves. Teach them that to select gifts that come within their means is only common honesty and that part of the value of the gift lies in the thought it carries.

Begin early with the Christmas gifts, not only because it makes possible a wiser selection of gifts and a real enjoyment of the buying and making, but because buying early relieves the sales people in the stores of the fearful strain so general at Christmas time; and teach the children that this consideration is part of the Christmas spirit. The rush and haste of leaving things till the last minute lessens one's own pleasure, and may cause needless unhappiness to others.

Most of all, be sure the children know the real reason for Christmas giving, "God's best gift to us," the little Child who was born on Christmas day.

THE HOUSEHOLD REFRIGERATOR¹

MINNA C. DENTON

It has been wisely said that ordinary milk which has been kept for twenty-four hours at a temperature above 50°F., should not be fed to a baby without being scalded,—even if it has not yet soured. Similarly, other perishable foods, such as meats, eggs, and cream, which have to be kept for some days or even hours in the home, ought to be stored at a temperature below 50°F. if possible. Yet the average cellar, even in northern states, does not as a rule maintain a temperature lower than 60° to 65°.

If the reader will test the temperature of her own refrigerator with a thermometer she will doubtless discover that it ranges between 50°

¹ Copyrighted.

and 60°, or occasionally a little higher or lower, according to the location of the thermometer in the refrigerator, the degree of excellence of the refrigerator, and the room temperature (weather) on the day when the test was made. Moreover, it is safe to say that through the summer, in many if not in most localities in the United States, a box which will constantly maintain as low a temperature as this, will require 150 pounds or more of ice a week—or else there is something unusual in the circumstances or in the treatment it receives. Yet according to Dr. John R. Williams, Secretary Milk Commission, Rochester, N. Y.,² the efficient refrigerator or ice-box should have a temperature not in excess of 50°F., preferably below 45°;³ and it should use about one-third to one-fifth the amount of ice now consumed by the average box.

The trouble is, that the housewife who buys the refrigerator judges it according to finish and general appearance, whereas the detail upon which its efficiency depends is the amount and kind of insulation furnished between inner and outer walls. This insulation may be sawdust, charcoal, mineral wool, felt, vegetable fiber, cork filings, or cork board; in a cheap box it may be nothing but a layer or two of paper. Whatever it is, it is probably packed densely into the air space which is inside the wall, so as to prevent circulation or currents of air; for a dead-air space is the poorest conductor, or the best non-conductor of heat which has yet been devised for such a purpose as this. In order to be truly "dead," however, the air space must be minutely subdivided into small compartments which are kept more or less separate from each other.

This insulating material should also be non-absorbent of moisture, particularly if the box has a painted or galvanized metal lining, which will, of course, in time rust sufficiently in corners and crevices to allow some of the moist air or even water to gain access to the insulating material. Not only does this absorbed moisture lower the efficiency of the insulating material, but it will also in time warp and rot the wood casing, and cause the doors to become ill-fitting; this allows direct leakage of warm air into the box.

It will be observed that all of the cheaper insulating materials mentioned above do absorb moisture very readily. The superiority of sev-

² A Study of Refrigeration in the Home, and the Efficiency of Household Refrigerators. Read at the Third International Congress of Refrigeration, September, 1913.

³ Circular 65 Bureau of Standards mentions 45° to 50° F. as suitable temperatures for the household refrigerator. State laws and city ordinances concerning transportation of milk supplies frequently specify 50° or below during summer weather.

eral inches' thickness of good cork board over some of the other materials so commonly used, is apparent; and though it will add several dollars to the cost of the refrigerator, that money will be returned to the consumer during the first six months of its use, in the form of saving on ice bills. At least, so figures Dr. Williams.

More important still, this added insulation secures the lower temperature needed to make perishable foods safe. At least three inches of such insulation (exclusive of thickness of wooden case and metal or tile lining) should be supplied, and the retailer who sells the box should exhibit a small sample section of the wall showing the amount and character of this insulation.

Lining of the Refrigerator. The lining of the food chambers should be white, so that it may show at once the presence of dirt or of materials which have been spilled on it. Seamless vitreous or porcelain enamel, such as is used on bathtubs or lavatories, makes a protection for the metal lining which is far superior to the coat of white enamel paint found in the less expensive grades of ice boxes, though it is not at all impossible to keep the white painted lining in good condition for a few years at least. Glass, tile, and solid porcelain slabs are sometimes used to line refrigerators; any necessary seams or joinings should be tightly and smoothly cemented together, *not* joined by strips of metal whose edges may easily become soiled, or harbor, upon occasion, cockroaches, or even bacilli.

In general it may be laid down as a safe rule, that if the manufacturer's name and address do not appear on the box, he has not produced an article of which he is proud nor one of any great value.

Tight fitting doors (not bevelled) with latches that hold when pressed firmly shut, constitute a detail of importance.

Location of the refrigerator. The refrigerator can not be expected to give its best service if located in a warm place; this fact is a serious drawback toward placing it either in the kitchen or in an outside wall upon which the sun shines. If possible, it should be set where it will be cold enough in winter not to need ice. An ideal arrangement would be to have it set or built into an inside wall between pantry and back entry or covered porch; this gives opportunity for the iceman to fill it without tracking through the kitchen, and yet the door to food chambers opens into the pantry. The convenience of having the refrigerator placed near the kitchen work table, is perhaps somewhat exaggerated by some writers on household administration. The cellar, however, does seem

decidedly too inconvenient a location, and is likely also to be musty, and too dark to be sure of absolute cleanliness. The wise housekeeper plans her work so as to open the ice-box door as seldom as possible; if she can manage so that this occurs only ten or twelve times a day, so much the better, in the interests of ice economy as well as of food sanitation.

The drip pipe of the refrigerator commonly closes at the bottom with a sort of trap holding a light water seal which prevents the warm outside air from entering the box at this point. Some inches below this is set a larger basin with trap, and waste pipe leading away from it. This waste pipe is sometimes led outside the house to a gravel or tile drain which carries the water from the house; or sometimes it empties itself above a basement fixture or open trap which is connected with the house sewer. This series of traps and broken connections makes it practically impossible for the sewer air ever to enter the refrigerator—an occurrence which would be highly undesirable from the esthetic standpoint, to say the least, apart from any (exceedingly remote) possibility of carrying infection into food.

Care of the refrigerator. The water drippings from melting ice, and the surfaces over which it passes, are not sterile even though they may be thoroughly clean from the housewife's standpoint. On the contrary, certain slime-producing organisms flourish well in these cool, dark, damp places; and though they are not in the least dangerous to health, they do clog up the pipes in time. Besides this slime, there is usually more or less dirt and debris coming from the ice; and so the drip pipe is made removable for most of its length, and should be thoroughly scrubbed out every two or three weeks, as should also the removable cups in the traps. An occasional flushing with hot washing soda solution tends to "cut" this slime and prevent its accumulation.

The inside of the food chamber should be kept as clean as are the dishes into which food is put,—mainly for esthetic reasons, since it is difficult to conceive of household conditions such that food could ever become infected with disease-producing or "ptomaine"-forming organisms coming from the walls of the refrigerator. A thorough scrubbing of walls with soap suds, washing powder, or disinfectant, will not often be necessary if pains be taken to wipe up every slop and spill at the time it occurs.

Ice should not be wrapped in paper or blankets to keep it from melting. Only by its melting can the food chamber be kept cool.

AN ADEQUATE DIET

The interest of late years in the subject of diet has resulted in many books and articles written by those who at most have the "little knowledge" that "is a dangerous thing." Unproved "facts" have been stated as truths; faddists have exploited their own opinions; alarmists have implied dangers that are at least remote; and, worst of all, half-truths have been given, difficult to deny, yet often most misleading.

It is only within a comparatively short time that we have had a "fundamental basis for nutrition." It is good to know that many experts in research and knowledge are now interpreting their results for the benefit of those without technical training.

Dr. Graham Lusk of Cornell Medical School, Dr. Lafayette Mendel of Yale, Dr. Percy Stiles of Harvard, have each given in most readable form, within the compass of a fifty cent book, the main facts that have been established. Others have published short papers that need little or no interpretation to make them useful to the homemaker. One of these by Dr. McCollum of Wisconsin, has lately appeared in the *New York Medical Journal*. He has not only pointed out the "essential factors in a successful diet," but has shown how these have been determined. He says:

Our knowledge of this subject has come through persistent experimenting with rations made up of purified food stuffs. With such diets, employing rats as experimental animals, the writer has now had a continuous experience covering nine years. The evidence appears to be convincing that we are now in possession of an adequate theory concerning what constitutes a successful diet.

If a young rat is placed upon a diet consisting of purified protein, carbohydrate, a vegetable fat such as olive oil, and an inorganic salt mixture made up in imitation of the mineral content of some ration of ordinary food stuffs with which normal nutrition has been secured, no growth can take place. The reason for this is that this mixture, although it contains all the food principles which are ordinarily laid down in textbooks on nutrition, still lacks two chemical factors which are essential for growth or prolonged well being. The evidence for this assumption is as follows:

Suppose we prepare and add to this ration a water or alcoholic extract of some natural food stuff, such as peas, rice polishings, or wheat, which has been found effective in the cure of beriberi, and which therefore contains what has been designated *vitamine*. Even with this addition no growth can be secured.

If, however, we add to this mixture of purified protein, carbohydrate, vegetable fat, and salt mixture, both the extract described above and four or five per cent of butter fat, the food mixture becomes adequate for growth from weaning time to the normal adult size, and supports reproduction and the rearing of young. Certain other fats may be substituted for the butter fat, viz., egg yolk, fat or fats from the cells of animal organs; but thus far no vegetable fats have been found which contain enough of the unknown something to induce growth at the normal rate. It is present in certain vegetable foods, especially in the leaves of plants, and therefore in that part consumed in large amounts by the herbivora, but to much less degree by other animals. The corn and wheat kernels contain some of it, but the amount is too low for normal growth, while the oat kernel seems to have less than the other two named. In none of the cereal grains have we found a content of this substance sufficient to meet the demands of a growing animal.

The chemical nature of both these things is unknown.

The water soluble substance (vitamine) is widely distributed in liberal amounts in our naturally occurring food stuffs, but is not present in starch, cane sugar, polished rice, or in any of the fats of either animal or plant origin.

Now let us consider what such experimental results mean. If an animal can grow to maturity, reproduce, and rear young on a monotonous diet of purified protein, carbohydrate, butter fat, and salt mixture, to which a little water or alcoholic extract of a grain is added it is evident that all the complexes essential for complete nutrition are present in the mixture. There is abundant experience to prove that the protein of the ration may be a phosphorus-containing one, such as casein from milk, or it may be a phosphorus-free protein as albumin of egg. The young animal can draw all the phosphorus needed from simple inorganic phosphates, which are furnished in the salt mixture added to its food. In the course of many trials I have never seen growth enhanced by the addition of organic phosphorus compounds.

All the iron can likewise be drawn from inorganic forms of iron, since in the diets employed in our work the iron was supplied only in the form of citrate or lactate.

It should be emphasized that proteins are by no means of equivalent values as sources of nitrogen. There are some proteins which, if taken singly, are insufficient as sole sources of nitrogen for a growing animal.

Dr. McCollum concludes from continued experiments, that while some organic constituents of food, long thought indispensable, may be supplied in other forms, there exist two indispensable dietary factors not recognized until lately. These are often called food accessories.

The practical application of their discovery lies in the increased

emphasis on the advantage of a mixed diet, and, in case of a restricted diet, the necessity of paying especial attention to their inclusion.

The following are some of the books and papers dealing with diet that are especially valuable to the householder.

An Adequate Diet. By Percy Stiles. Harvard University Press, Cambridge, Mass., 1916, pp. 48. \$0.50.

The Fundamental Basis of Nutrition. By Graham Lusk. Yale University Press, New Haven, Conn., 1914, pp. 62. \$0.50.

Changes in the Food Supply. By Lafayette Mendel. Yale University Press, 1915, pp. 61. \$0.50.

The Mineral Nutrients in Practical Human Dietetics. By E. B. Forbes, JOURNAL OF HOME ECONOMICS, March, 1916, pp. 122-130.

Food Selection for Rational and Economical Living. By C. F. Langworthy, JOURNAL OF HOME ECONOMICS, June, 1916, pp. 313-318.

The Essential Factors in a Successful Diet. By E. V. McCollum, *New York Medical Journal*, April, 1916, pp. 838, 839.

EDITORIAL

Free Reference Home Economics Library. The establishment of a free reference library in Home Economics in New York by the National Special Aid Society, reported in the news columns, is a long step forward in the work for the homemakers of this country. The public libraries have been helpful, but they have unfortunately not had the information to discriminate between the books that give accurate information and those that are amateurish and often full of extraordinary misstatements. The public libraries also, and naturally, put the greater part of the Home Economics books into the circulating department, and the homemaker who makes an effort to get to the library for help in her housekeeping problems is discouraged to find that all the books are "out." She is also puzzled to choose among them those particularly suited to her need. Only a person with Home Economics training can help her in this, and no small part of the importance of the new library is that there this has been provided. It is to be hoped that other cities will soon be provided with similar collections and librarians, either as part of the regular public library work or as the enterprise of some special group like the one in New York.

The Ellen H. Richards Home Economics Memorial Fund. The trustees of the Richards Memorial Fund are sending out a letter asking that each reader of the JOURNAL and member of the Association make a personal contribution toward the increase of the Fund by sending one dollar for Home Economics Day, December 3, 1916. The Fund is now over \$4,000 and it would be nearly doubled if this plan should be carried out.

That the Fund be completed is the great desire not only of those who knew Mrs. Richards but also of those who believe that the American Home Economics Association has real work to do for the home. Many individuals have given to it already and many schools have raised money for it through plays, teas, or in other ways, but we must do much more if we are to have a fund so large that its income may accomplish the work that is offering itself.

There seems to have been some confusion between this fund and the Ellen H. Richards Research Fund and because of this some have thought our fund already completed.

In January, 1913, there was presented to the Massachusetts Institute of Technology a fund of \$15,000, in memory of Mrs. Richards, to be known by her name, and to be used for research work in sanitary chemistry. This is administered by the Institute, in Mrs. Richards' own department.

The Ellen H. Richards Home Economics Memorial Fund, on the other hand, is being raised by the American Home Economics Association, and is controlled by a board of trustees elected by the Council of that association. Mr. Frederick B. Pratt of Pratt Institute is Chairman of this board, and Dr. Andrews of Teachers College, Secretary-Treasurer.

The fund is invested and only the income is to be used for "advancing home economics in fundamental ways by research and publication" and practical social service.

So far this income has been expended chiefly on the various publications listed under the name of the Richards Memorial Fund. Many of these are by their sale already bringing in returns.

"The Best Laid Plans." It was the plan of the Editor and the JOURNAL Board, with the coöperation of the Science Section, to make this December number of the magazine largely a review of the investigations and research recorded from August, 1915, to August, 1916. It was hoped that these might be presented in such a way as to be of real service not only to the college teacher but to those teaching in the high schools, and to the householder as well.

Many things have interfered so that the plan has been only partially carried out. We believe, however, that Miss Blunt's article alone would justify the attempt we made. Early in the year similar reviews will appear covering other subjects.

ANNOUNCEMENT

The Richards Memorial Fund Committee are collecting material for a biographical sketch of Mrs. Edna Day Hyde. They ask that all who have letters, biographical facts, notes on talks, addresses, lectures, or courses from which selection may be made, send them to Dr. B. R. Andrews, Teachers College, Columbia University, New York City, or to the JOURNAL.

BOOKS AND LITERATURE

Any book or periodical mentioned in this department may be obtained through the JOURNAL OF HOME ECONOMICS if the Journal price is listed.

A History of the Family as a Social and Educational Institution. By WILLYSTINE GOODSSELL. New York: The Macmillan Company, 1915, pp. 588. \$2.00. By mail of the Journal, \$2.14.

Present-day homes and family relationships are a subject of such widespread discussion that a new study of the situation by a recognized authority is welcomed alike by the casual reader and the student. Those who have struggled with the scattered and scanty suitable material of the past, realize what a prodigious study and effort is represented in Goodsell's *History of the family as a Social and Educational Institution* and feel a corresponding gratitude for such substantial and masterly aid as it affords.

No theories concerning the social relationships of the family can be valued which are not based upon a careful and intelligent study of the past. This volume presents a painstaking historical survey from the earliest primitive forms of marriage to the present. With rare human touch and interest the narrative covers the Hebrew, Greek, and Roman types, the family of the Middle Ages, the Renaissance, the English family of the seventeenth and eighteenth centuries and, finally, the American family from the Colonial period to the present. The position of woman in the home and family life of these different periods, her rights, restrictions, opportunities, and duties, are all graphically pictured. Significant modifications due to the influence of conquests, the introduction of Christianity, industrial changes and racial characteristics are traced in illuminating fashion.

One comes, finally, to the closing chapters, which consider present problems and prevailing theories concerning family stability, the disharmonies evidenced in increasing divorce, the decline of the birth rate, the

future status of woman, and the like, with a consciousness of the excellent preparation of the previous chapters for saner and more intelligent judgment concerning these perplexities in our social order. The natural, subtle argument of the book paves the way for the next progressive step as that of woman's fuller emancipation with increased power and opportunity. The conviction of her capacity to meet the enlarged responsibilities grows as one traces the results of her increased influence in the past.

One is especially grateful for the optimism and assurance of steady growth and progress which characterizes the book. It is very refreshing and heartening in the midst of its more sombre contemporaries. It is seldom that an author is so happy in being able to present an appeal to so varied a reading public, and at the same time give to the literature on this difficult subject such a scholarly contribution.

BERTHA M. TERRILL.

General Science. By LEWIS ELHUFF. Boston: D. C. Heath and Company, 1916, pp. viii + 438. \$1.20. By mail of the Journal, \$1.32.

No demand on the school is more urgent today, than that it shall give boys and girls an opportunity to study a science which meets pupil needs. The purpose of this book is, of course, to meet this demand. The crux of the problem which presented itself to the author was to interpret correctly pupil needs and then adopt that method which best meets that need.

The author very properly made the pupil,—his health, interests, experiences, environment—the focusing point. This being the basis of selection of subject matter, we find discussed in this book topics which have, in the main, a practical bearing and a real sig-

nificance socially. In this category belong such topics as health, ventilation, city water supply, artificial lighting, how to care for the soil, and many others. These are the topics which meet pupil and community needs as far as subject matter goes and these he has given adequate and illuminating treatment.

There are forty-two chapters. At the end of each chapter appears a series of questions and exercises. They are descriptions of experiments to be performed at home or questions calling for an application of the facts and principles learned. The excellence of these questions and exercises is a feature of this book. They are a distinct help to the teacher who wants to give real live science instruction.

The author is more fortunate in his book than in the statement of his pedagogical creed. It has not been established as stated in the preface that "repetition of fundamentals until they become a part of the pupil is the secret of successful science teaching." The fundamentals of science are not the most fundamental things, i.e., the end and aim of science instruction. There is a growing conviction that science in schools has suffered much from this practice of drilling in fundamentals. The growth of "general science" is, in a large measure, a protest against this conception of science teaching. But pupils do not read prefaces and that which the author conceives to be the highest aim and purpose of science teaching is not evident in the printed page of the text.

This book is a faithful compilation of scientific facts and principles worth while. The teacher needs this kind to attain the highest purposes of science instruction and on this ground the book deserves careful consideration. ROLAND H. WILLIAMS.

The Science of Home Making. By EMMA E. PIRIE. Chicago: Scott, Foresman and Company, 1915, pp. 392. \$0.90. By mail of the Journal, \$1.00.

This textbook is intended for use in the grammar and lower high school grades; and it covers an enormous territory, amas-

ingly well, for the most part. Notwithstanding the largeness of its title, it is devoted chiefly to foods and cooking; yet laundering, home nursing, infant feeding and care, household accounts and family budget, house furnishing and decoration and care, pure food laws, table manners, intestinal segmentation, agar jellies for bacteriological studies, all receive some brief attention.

The recipes are very numerous and highly varied; in fact, they furnish one of the best features of the book, though errors, presumably typographical, have crept in once or twice at least.

The author has a happy faculty of treating complicated matters in simple language and concise fashion; as when she disposes of "the balanced ration" in a few well-chosen words, which though they explain little and omit much, can hardly prove misleading, in the large view. Her practical points in housewifery are most helpful. The greater part of her material is well up to date.

In the effort to cover so much territory, however, it is inevitable that some misrepresentations must occur. "If the supply of oxygen is deficient the digestion is slow" (importance of fresh air), "silver plate is hard to keep in order," "use thin, light enameled ware for (cooking of) foods containing much acid or soda," "shelves and towel rods of glass are most hygienic for the bath room," "one-seventh (of the daily 3000 calories) should come from proteins, two-sevenths from fat," "though some authorities recommend a greater proportion of protein,"—these are some of the things we feel inclined to dispute.

It will take an unusually good teacher to carry through successfully with such young students some of the exercises suggested; e.g., pp. 44 and 45 (digestion experiments, food analysis), p. 49 (table of digestive enzymes), p. 56 (make out several daily balanced rations—at the very beginning of the food study). One has a feeling, that if all of the work here outlined were really carried out, there would be little left for succeeding courses to accomplish.

MINNA DENTON.

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Contributions to the Bibliography are welcomed. Please send material to the JOURNAL.

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NEWS FROM THE FIELD

ANNUAL MEETING OF THE AMERICAN HOME ECONOMICS ASSOCIATION, CORNELL UNIVERSITY, ITHACA, NEW YORK, JUNE 28—JULY 2, 1916

Within a few days the *Proceedings* of the annual meeting are to be published and a copy will be sent to active members as one of the regular Bulletins of the Association. These proceedings will contain all the papers presented except such as are printed in the *JOURNAL*, and these will be summarized.

A brief account of the meeting was given in the August *JOURNAL*, and this more formal report is added chiefly for those who do not wish the full proceedings.

The ninth annual meeting of the American Home Economics Association was held at Cornell University from June 28 to July 2, 1916. In addition to the General Program, there were meetings of the Institution, Extension, and Science Sections, Conferences on Cafeteria Management, Laundry Management, Dietetics, and Budgets, and the Program of the Committee of Fifty for Journalism.

Institution Section

The first session of the Institution Section was held on Wednesday, June 28, at 9.30 a.m. Miss Emma H. Gunther, Secretary, acted as Chairman in the absence of Miss Sarah Louise Arnold. The meeting, with the subject—Students' Food—was opened by Miss Elizabeth Goodrich of Simmons College who read a paper on Service at a Dormitory Table. Problems connected with the choice and service of food were discussed in the light of personal experience by Miss Lord, Miss Goodrich, Miss Watson, Miss Loomis, and Mr. Proudman.

A second meeting of the Section was held on Wednesday evening, June 28, at 8 p.m., at which Prof. Wm. Morse Cole of Harvard University presided. Prof. C.-E. A. Winslow of the School of Medicine, Yale University, presented a paper on Sanitary Surveys of Institutions in which he enumerated the most important factors and discussed the methods most likely to meet with success in carrying out the survey. Miss Henrietta Roelofs, Household Employment Commission of the Y. W. C. A., New York City, read a paper on Studies of Labor Problems in Household Employment. There was an extended discussion of various problems connected with service.

Extension Section

The meeting of the Extension Section was held on Wednesday, June 28, at 9.30 a.m. Miss Laura Comstock presided in the absence of Miss McCheyne. A paper on the Purpose of the Extension Section was read by Miss Comstock, this meeting being the first anniversary of the founding of the Section. The other papers presented were: The Relation of the Extension Staff of the University to the Regular Department of Home Economics, by Mamie Bunch, State Leader in Home Economics Extension, University of Illinois; Courses of Instruction for Extension Workers, by Elizabeth Kelley, University of Wisconsin; How We Conduct the Work in Florida, by Agnes Ellen Harris, State University, Tallahassee, Florida; Financing the Home Demonstration Work, by D. W. Working, U. S. Department of Agriculture; and Home Demonstration Work in the South by Ola Powell, U. S. Department of Agriculture. Miss Van Rensselaer explained the program and opened

the discussion of the "County Agent." This subject was discussed further by Miss Kelley of Wisconsin, Miss Pritchett of Maryland, Miss Hayes of Connecticut, Miss Comstock of Massachusetts, Miss Rowe of Minnesota, Mrs. Warner of Massachusetts, Mr. Forestahl, County Agent of Cortland County, New York, and Miss Benefiel of Illinois. Junior Extension Work was discussed by Mr. Griffin and Miss Titsworth of Cornell.

At the afternoon session reports of committees were read and officers of the Section were elected as follows: Miss Neale S. Knowles of Iowa State College, Chairman, and Miss Edith Parrott of Wnthrop College, Secretary.

On June 30 at 9 a.m., Mr. Forestahl talked on Results in Home Surveys; this was continued at the afternoon session.

Science Section

The sessions of the Science Section were held on June 28 at 9.30 a.m. and 2.30 p. m. The following papers were presented: The Digestibility of Starch as Affected by Various Processes of Cookery, Amy Louise Daniels, University of Wisconsin; Practical Ways of Increasing the Iron Content of the Diet, Caroline L. Hunt, Department of Agriculture; The Most Favorable Temperatures for the Cooking of Some Typical Foods, Louise Stanley and May Wallace, University of Missouri; Recent Contributions to Knowledge of Mineral Metabolism Grace McLeod, Pratt Institute; The New Dietetic Treatment of Diabetes Mellitus, Lenna F. Cooper, Battle Creek, Michigan; Recent Contributions of Bacteriology to the Home, Mrs. Josephine Kerr Allison, Urbana, Ill.; Creatin and Creatinin in Excretion, Mrs. Emma B. Wagner, University of Missouri; Coöperation Between the Home Economics Department and the Hospital, Ruth Wardall, Iowa State University.

On June 30, at 3.30 p.m. the adjourned meeting took the form of an informal questionaire and Drs. DuBois and Langworthy answered questions regarding various phases of nutrition. At an adjourned meeting at 7.00 p.m. the following officers were elected: Chairman, Ruth Wheeler, University of Illinois; Secretary, Lenna F. Cooper, Battle Creek.

General Program

The General Program extended through June 29 and 30. The following papers were read, relative to housing: The Development of the House, by Helen Binkerd Young, which discussed the factors to be considered in planning a house; Practice Houses for Students in Home Economics, by Isabel Ely Lord, in which were described the practice houses at Pratt Institute where students work out the problems of housekeeping; and the Housing Problem, by Lawrence Veiller, which discussed unhygienic conditions due to dark rooms, overcrowding, and lack of proper toilet facilities, both urban and rural.

At the Conference on Health, Prof. C.-E. A. Winalow read a paper on Public Health in the Past and in the Future and Dr. Foster read a paper by Dr. William F. Snow on The Relation of Home Economics Education to Social Hygiene. At the evening session, Mr. Alvin E. Dodd read a paper on Training Women to Earn—A National Movement. In the discussion of this paper considerable information was given regarding the Smith-Hughes bill for vocational education. Miss Ward and Miss Powell of the U. S. Department of Agriculture spoke of the work in Home Economics Extension under the Smith-Lever Act.

On June 30 at 9.30 a.m. Mrs. Mary Schenck Woolman read a paper on Medium Priced Linens for Institution and Home; Miss Celestine Schmit one on The Teaching of Sewing and Miss Ethel Ronzone one on The Standardization of Women's Clothing. Prof. Wilder D. Bancroft spoke on Chemistry and Cooking, and Dr. E. M. DuBois read a paper on The Basal Energy Requirement of Man.

At 2.00 p.m. a Conference was held on Elementary Education in Home Economics at which Mrs. Martha French presided. Papers were presented by Miss Adelaide L. VanDuzer

on Home Economics Equipment, and Miss Ada Z. Fish on the Penn Family, which described the methods of teaching Home Economics used in the William Penn High School, Philadelphia, Pa. At the same hour a Conference of Administrative Workers was held at which Miss Josephine Berry presided, and one on Social Work in Home Economics at which Miss Emma A. Winslow presided.

The Program of the Committee of Fifty for Journalism

The Chairman of this meeting was Miss Anna M. East of Philadelphia, Pa. The following papers were read: Training the Pen to Keep Step with the Laboratory, by Mrs. Alice P. Norton; The Editors Blue Pencil, discussed by Anna Barrows, Mrs. Jessamine Chapman Williams and Helen Louise Johnson; Our Writing Laboratory—The Papers, by Harry R. O'Brien; Why the Business World Needs Experts who Can Write, by Mrs. Grace R. Wilmot; How Uncle Sam Writes, by C. F. Langworthy; Writing Your Own Press Notices by Mamie Bunch; Charting Your Way, by Geo. E. Farrell; and Balancing Menus for Print, by Lenna F. Cooper. The subject of Filling the Gap—How to Cover the Distance Between the Domestic Science Expert and the Editor was discussed by Isabel Bevier and Marie Sellers, and letters were read from James Tower and Mrs. Janet McKenzie Hill on the subject. Other papers presented were Planning My Magazine, by Leonarda Goss; Helping Farm Homemakers to Study their Business, by Harriet Mason; The Possibilities of a Woman's Page in the Daily Newspapers, by Mrs. Eva Hansl; Writing for the Family of Low-cost Standards, by Florence Nesbit, and Printing in Response to Request, by Elizabeth McCracken.

Conferences and Special Meetings

At the Conference on Cafeteria Management, Miss Anna M. East described the cafeteria of the Curtis Publishing Company and a number of problems in the work were discussed by Miss Goodrich, Miss Riley, Miss Lord, and others.

At the Conference on Laundry Management, Miss Balderston reported the results of a study of the relative costs of laundry work in various parts of the United States and in British Columbia, and various phases of Laundry work were discussed.

Special meetings attended by a large number of dietitians were held. Miss Lenna F. Cooper of Battle Creek, Mich., acted as Chairman, and Miss Rena S. Eckman of Massachusetts General Hospital, Boston, as Secretary. At these meetings special topics were discussed and certain measures were recommended toward future work in connection with the dietitian problem.

The committee which was appointed at the annual meeting in 1915 to investigate problems relative to the training of the different types of dietitians made its report at a special sectional meeting. The questionnaire method of the previous year was again used, this time being sent to dietitians instead of the hospital superintendents.

About twenty replies were received. The answers commented upon the length of the course of training for dietitians, the deficiencies which had been found in their past training, and made recommendations for future additional courses, and suggested other questions which required some consideration, such as hospital ethics, and relation to the administrative staff.

On the evening of July 1, a conference on budgets was held at which Dr. Andrews presided. After the opening remarks by Dr. Andrews the following papers were presented. Budget Studies, by Mrs. Mary Hinman Abel; The Cost of Living of College Students, by Sara MacLeod; The Clothing Budget, by Ethel Ronzone; Budgets of Families in Narrow Circumstances, by Winifred Gibbs; and Methods of Keeping Cash Account Records in the Household, by William Morse Cole.

On Sunday afternoon, July 2, a Community Meeting was held at which Dr. A. R. Mann presented a paper on The Home and the Community.

A Free Reference Library on Home Economics, has been opened at 259 Fifth Avenue, New York City, in the rooms of the National Special Aid Society. A librarian trained in Home Economics (Miss Eunice Doggett, Pratt Institute Normal Household Science, 1913) is in charge.

The National Special Aid Society in its work for "preparedness" has a Committee on Home Economics, with the following membership; Mrs. Annie Nathan Meyer, Chairman; Eva Barnard, Laura Canble, Frank Curtis Gephart, Mabel Kittredge, Isabel Ely Lord, Frank Manny, Mrs. Ellen Rushmore McKeon, Mrs. Mary Schwartz Rose, May Van Arsdale, and Florence Winchell.

This committee believes that an important part of preparing for homemaking is the making available the best printed matter on the subject. The Home Economics Association of Greater New York has given hearty coöperation to the committee and owns the books. The National Special Aid Society provides quarters and pays the librarian's salary.

The library contains books approved for the purpose by the Committee on Home Economics, government bulletins, and the publications of Home Economics departments of colleges and universities. The library has been most fortunate in receiving a gift from Miss Margaret Loring Thomas of the first six volumes of the JOURNAL OF HOME ECONOMICS, lacking only the following numbers, Volume II, No. 2, Volume III, Nos. 2, 3, and 5. The committee hopes very much that someone who has these

numbers will contribute them. The set will then be bound.

The JOURNAL is the only periodical that will be part of the library, but it is the intention to clip the files of other magazines, when articles of value are published, and to have this material classified and made available.

The library is absolutely free, and teachers as well as homemakers are urged to use it.

The American Association for the Advancement of Science and about forty national scientific societies affiliated with it will meet in New York City from December 26 to 30, 1916, under the auspices of Columbia University, New York University, the College of the City of New York, The American Museum of Natural History, and the other scientific and educational institutions of the city. Dr. Charles R. Van Hise, president of the University of Wisconsin, will preside. For further information apply to L. O. Howard, Permanent Secretary, American Association for the Advancement of Science, Smithsonian Institution, Washington, D. C.

Brief Notes: Prof. Marion Talbot, of the Department of Household Administration at the University of Chicago, and Dean of Women, has recently been made chairman of the new committee on public health for the Woman's City Club of Chicago.

Dr. Nellie Esther Goldthwaite, who has resigned her position in New Hampshire College, will travel for a year or more in Japan and the Orient.

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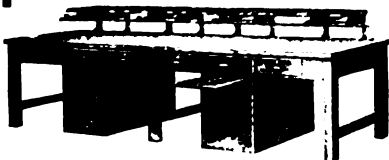
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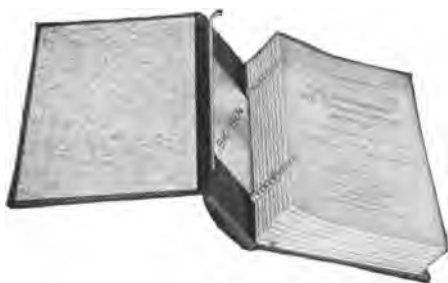
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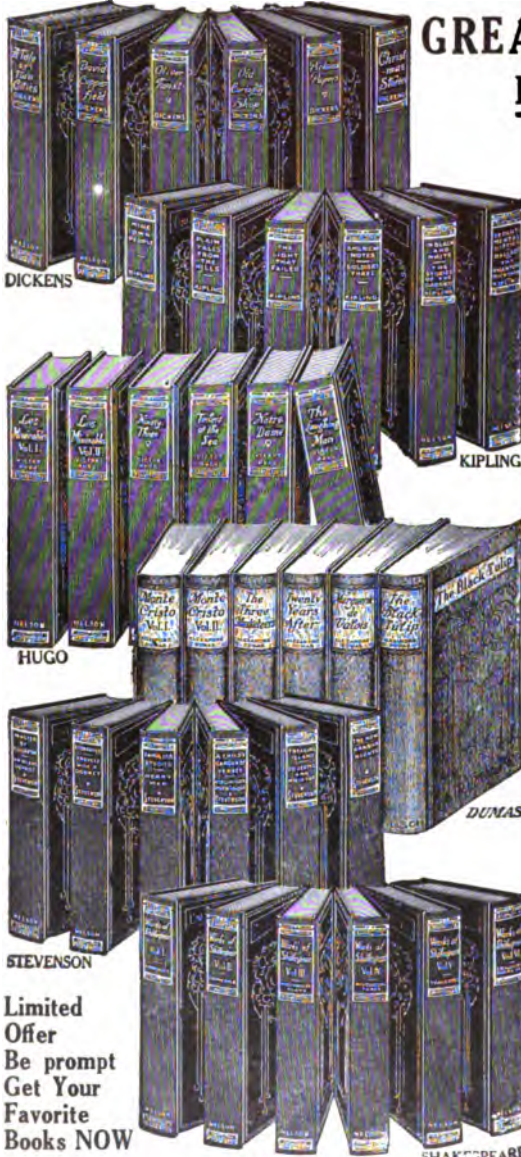
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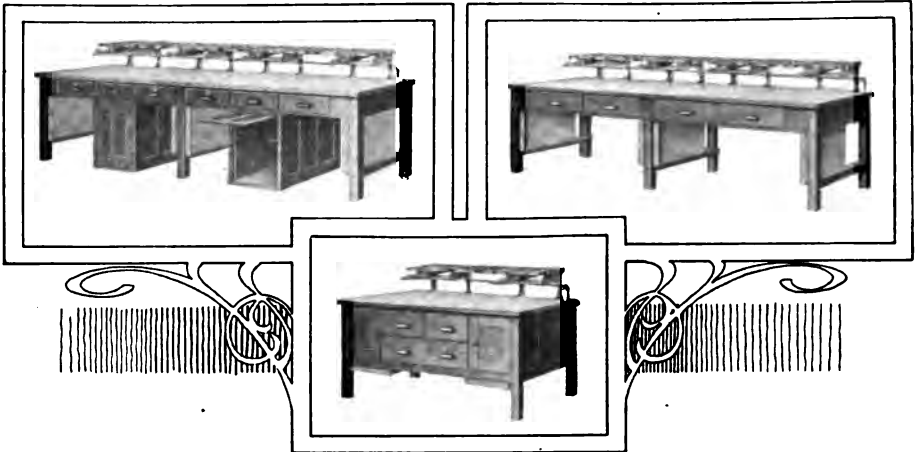
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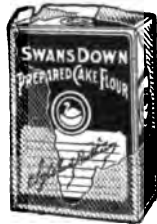
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